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REGAL PYTHONS IN THE ZOOLOGICAL PARK

The largest specimen is twenty-four feet long and weighs about two-hundred pounds. The painted back-ground is representative of treatment of the different cage walls.

**TWENTIETH ANNUAL REPORT
OF THE
NEW YORK
ZOOLOGICAL SOCIETY**

CHARTERED IN 1895

**OBJECTS OF THE SOCIETY
A PUBLIC ZOOLOGICAL PARK
THE PRESERVATION OF OUR NATIVE ANIMALS
THE PROMOTION OF ZOOLOGY**

1915



**NEW YORK
OFFICE OF THE SOCIETY, 111 BROADWAY
JANUARY, 1916**

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GOODWIN, GEORGE B.,
GOODWIN, MRS. J. J.,
GOTTHELF, CHARLES,
GOTTHELF, HERMAN,
GOTTHOLD, FREDERIC,
GOULD, CHARLES A.,
GOULD, DR. FREDERIC S.,
GOULD, CHARLES W.,
GOULD, EDWIN,
GRAHAM, MRS. ROBERT D.,
GRAHAM, MRS. GEORGE S.,
GRAF, WILLIAM,
GRAVES, JR., HENRY,
GRAVES, GEORGE COE,
GRAVES, J. P.,
GRAY, HENRY G.,
GREEFF, ERNEST F.,
GREENE, JR., G. S.,
GREENOUGH, JOHN,
GREENOUGH, MRS. JOHN,
GREENWOOD, JOSEPH R.,
GREER, CHARLES,
GREER, MRS. LOUIS MORRIS,
GRIFFIN, MRS. WILLIAM P.,
GRIFFITH, MISS MARGARET E.,
GRIFFITH, MISS SUSAN D.,
GRINNELL, E. MORGAN,
GRISCOM, JR., CLEMENT A.,
GRISWOLD, GEORGE,
GROSS, FRANK,
GRUNDNER, M.,
GUGGENHEIM, SIMON,
GUGGENHEIMER, MISS ELVIRA
GUINZBURG, A. M.,
GUITERAS, DR. RAMON,
GULLIVER, MRS. W. C.,
GURNEE, WALTER S.,
HACKETT, JAMES K.,
HAFFEN, JOHN M.,
HAGE, JOHN D.,
HAIGHT, CHARLES S.,
HAINES, CHARLES D.,
HAINES, HENRY F.,
HALL, A. C.,
HALL, ARTHUR H.,
HALL, FRANK L.,
HALLE, JACQUES S.,
HALLOCK, CHARLES P.,
HALLS, JR., WILLIAM,
HALSEY, HERBERT DRAKE,
HAMANN, WM. A.,
HAMERSLEY, LOUIS GORDON,

*DECEASED.

- HAMILTON, MISS ADELAIDE,
 HAMILTON, MISS ELIZABETH STEWART,
 HAMILTON, MRS. WILLIAM PIERSON,
 HAMMOND, MRS. JOHN HENRY,
 HAMMOND, OGDEN, H.,
 HAMMOND, WILLIAM F.,
 HANCE, JOHN A.,
 HANSMANN, CARL A.,
 HARD, ANSON W.,
 HARMON, MRS. CLIFFORD,
 HARPER, HARRY,
 HARPER, LATHROP C.,
 HARRIMAN, MRS. HERBERT M.,
 HARRIMAN, MRS. J. BORDEN,
 HARRISON, ARCHIBALD,
 HARTSHORNE, J. M.,
 HARVEY, ELI,
 HASSLACHER, JACOB,
 HASTINGS, MRS. THOMAS,
 HAVEMEYER, JR., H. O.,
 HAVEMEYER, J. C.,
 HAVEN, GEORGE G.,
 HAVEN, J. WOODWARD,
 HAVENS, ALBERT G.,
 HAWE, MATTHEW,
 HAWK, MRS. WILLIAM SAMUEL,
 HAYNES, WILLIAM DEFOREST,
 HECKER, DR. ANTON J.,
 HECKSCHER, MRS. AUGUST,
 HEDGES, JOB E.,
 HEIDE, JR., HENRY,
 HEIMAN, E.,
 HEINTZ, JOHN C.,
 HENCKEN, HANCKE,
 HENDERSON, JOHN B.,
 HENDERSON, NORMAN,
 HENNING, EMIL F.,
 HEPBURN, A. BARTON,
 HEPBURN, MRS. A. BARTON,
 HERMANN, BERNARD F.,
 HERMANN, MRS. FERDINAND,
 HERRICK, HAROLD,
 HERTER, MRS. ALBERT,
 HERTER, MRS. CHRISTIAN A.,
 HESS, SELMAR,
 HEWITT, HERBERT H.,
 HEXAMER, A. P.,
 HICKS, JOHN M. W.,
 HICKS, E. PIERPONT,
 HILL, E. B.,
 HILL, FRANK B.,
 HILL, ROBERT C.,
 HILLS, DR. ALFRED K.,
 HINCHMAN, WALTER,
 HINCKLEY, MRS. SAMUEL NEILSON,
 HIRSCH, CHARLES S.,
 HIRSCHLAND, FRANZ H.,
 HOCHSCHILD, BERTHOLD,
 HODGES, HARRISON B.,
 HOE, MRS. ROBERT,
 HOFFMAN, CHARLES FREDERICK,
 HOFFMAN, MISS M. U.,
 HOFFMAN, MRS. WILLIAM M. V.,
 HOGG, JAMES A.,
 HOLBROOK, MRS. EDWARD,
 HOLBROOK, MRS. F. S.,
 HOLT, HENRY,
 HOLTER, MRS. E. O.,
 HOLZMAISTER, LOUIS V.,
 HOOKER, DR. RANSOM S.,
 HOOLEY, EDWIN S.,
 HOMES, HENRY F.,
 HOPKINS, RUSSELL,
 HOPPIN, MISS FRANCES,
 HOPPIN, HAMILTON L.,
 HOPPIN, JR., WILLIAM W.,
 HORNADAY, MRS. J. C.,
 HORR, L. WM.,
 HOSKIER, H. C.,
 HOTCHKIN, W. B.,
 HOUSMAN, CLARENCE J.,
 HOWE, WIRT,
 HOWELL, T. A.,
 HOWLAND, MRS. HENRY E.,
 HOYT, COLGATE,
 HOYT, MRS. HENRY R.,
 HOYT, MRS. JESSE,
 HOYT, JOHN S.,
 HOYT, MISS VIRGINIA SCOTT,
 HOYT, WALTER S.,
 HUBBARD, WALTER C.,
 HUFF, E. S.,
 HUMPHREYS, MRS. EDWARD WALSH,
 HUNN, ARTHUR B.,
 HUNT, MRS. LEIGH,
 HUNTINGTON, MRS. ARCHER M.,
 HUNTINGTON, FORCE,
 HUNTINGTON, MRS. ROBERT P.,
 HUNTMAN, REV. GERARD H.,
 HUFFEL, J. CHRISTIAN G.,
 HUSSEY, WILLIAM H.,
 HUSTED, MISS M. KATHARINE,
 HUSTED, JR., SEYMOUR L.,
 HUTCHINS, AUGUSTUS SCHELL,
 HUTCHINSON, CARY T.,
 HUYLER, C. D.,
 HUYLER, F. D.,
 HYDE, AUGUSTUS L.,
 HYDE, B. T. BABBITT,
 HYDE, DR. FREDERICK E.,
 HYDE, MRS. WILLIAM H.,
 HYDE, W. TRUSLOW,
 IJAMS, J. T.,
 INCHES, GEORGE B.,
 IRONS, HENRY C.,
 IRVIN, MRS. RICHARD,

*DECEASED.

ISELIN, C. O'DONNELL,
 ISELIN, C. OLIVER,
 ISELIN, MISS GEORGINE,
 ISELIN, JOHN H.,
 ISELIN, MISS LOUISE M.,
 ISELIN, WILLIAM E.,
 ISELIN, MRS. WILLIAM E.,
 ISELIN, WILLIAM O'DONNELL,
 ISHAM, CHARLES B.,
 *ISHAM, SAMUEL,
 ISHAM, WILLIAM B.,
 JACKSON, DR. GEORGE THOMAS,
 JACKSON, R. HALSEY,
 JACOB, LAWRENCE,
 JACOBI, DR. A.,
 JACOBS, SAMUEL K.,
 JACOBUS, JOHN S.,
 JACQUELIN, HERBERT T. B.,
 JAMES, JR., HENRY,
 JAMES, DR. ROBERT C.,
 JAMES, MRS. WALTER B.,
 JARMULOWSKY, DR. HARRY,
 JENKINS, A. W.,
 JENKINS, MRS. HELEN H.,
 JENKINS, MATTHEW C.,
 *JENKINS, MICHAEL,
 JENKINS, WILLIAM B.,
 JENNINGS, FREDERICK B.,
 JENNINGS, PHILANDER R.,
 JENNINGS, SIDNEY J.,
 JENNINGS, WALTER,
 JESUP, RICHARD M.,
 JHONES, WILLIAM FOULKE,
 JOHNSON, F. COIT,
 JOHNSON, GUY B.,
 JOHNSTON, J. HERBERT,
 JOHNSTON, WILLIAM J.,
 JONES, MRS. A. MASON,
 JONES, MRS. CADWALADER,
 JONES, CHARLES H.,
 JONES, H. BOLTON,
 *JONES, DWIGHT A.,
 JONES, DR. ISRAEL C.,
 JONES, LEWIS Q.,
 JONES, TOWNSEND,
 JUDSON, H. I.,
 KAHN, FELIX E.,
 KAHN, LOUIS,
 KAHN, DR. ROBERT J.,
 KANE, MRS. DELANCEY,
 KANE, MISS LOUISA LANGDON,
 KAST, DR. LUDWIG,
 KAUPF, WILHELM,
 KAUTZ-EULENBERG, MISS P. R.,
 KEAN, HAMILTON FISH,
 KEAN, MRS. HAMILTON FISH,
 KEECH, FRANK B.,
 KEELER, MRS. C. B.,

KEIL, FRANCIS,
 KEIL, HENRY F.,
 KELLOGG, MRS. CHARLES,
 KELLY, HORACE R.,
 KENNEDY, EDWARD G.,
 KENNEDY, MRS. JOHN STEWART,
 KENT, EDWIN C.,
 KEPHART, REV. WILLIAM H.,
 KEPPEL, DAVID,
 KERNAN, MRS. WALTER N.,
 KEUFFEL, W. G.,
 KEYES, MRS. CHARLES W.,
 KEYSER, MRS. SAMUEL,
 KIDDER, JAMES HATHAWAY,
 KIMBALL, ALFRED R.,
 KING, AUGUSTUS F.,
 KING, MISS ETHEL,
 KING, JAMES GORE,
 KING, MRS. J. HOWARD,
 KING, MRS. LEROY,
 KINGSLAND, MRS. WILLIAM M.,
 KINNEY, WARREN,
 KINNEY, MRS. WARREN,
 KIP, W. RULOFF,
 KISSEL, MRS. W. THORN,
 KITCHING, FRANK W.,
 KITTREDGE, SAMUEL DANA,
 KITZ, JOSEPH,
 KLAU, MARC,
 KNAPP, ARNOLD,
 KNAPP, JR., MRS. HARRY K.,
 KNAPP, MRS. JOSEPH PALMER,
 KNIGHT, CHARLES R.,
 KNOEDLER, ROLAND F.,
 KOEHLER, H. C.,
 KOHLMAN, CHARLES,
 KOHLSAAT, MISS EDITH M.,
 KOLB, GUSTAVE F.,
 KOLB, JR., GEORGE C.,
 KOLB, FREDERICK,
 KOLES, DR. HENRY M.,
 KONTA, ALEXANDER,
 KONIG, GEORGE T. H.,
 KRAUS, SAM.,
 KREMER, WILLIAM N.,
 KREMER, MRS. WM. N.,
 KRECH, MRS. ALVIN W.,
 KRUNSCHEID, C. D.,
 KUEMPEL, MAX,
 KUHN, AUGUST,
 KUHN, JULIUS,
 KUNHARDT, HENRY R.,
 KURZMAN, CHARLES C.,
 KUSER, JOHN DRYDEN,
 KUSER, JOHN L.,
 KUTTROFF, ADOLF,
 KUTTROFF, FREDERICK,
 LACOMBE, HON. E. HENRY,

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LAGAI, DR. GEORGE,
 LAIMBEER, JR., JOHN.
 LAING, EDGAR H.,
 LAMBERT, DR. ALEXANDER,
 LAMBERT, DR. A. V. S.,
 LAMBERT, DR. SAMUEL W.,
 LAMBORN, A. H.,
 LAMONT, MRS. THOMAS WM.,
 LANDAUER, I. N.,
 LONDON, MRS. E. H.,
 LONDON, FRANCIS G.,
 LANE, EDWARD V. Z.,
 LANE, JAMES WARREN,
 LANE, WOLCOTT G.,
 LANGMANN, DR. GUSTAV,
 LANGE, MISS CARMEN,
 LANIER, MRS. JAMES F. D.,
 LAPHAM, MRS. JOHN J.,
 LATTING, CHARLES P.,
 LAUDER, JR., GEORGE,
 LAUTERBACH, MRS.
 LAWRENCE, JOHN BURLING,
 LAWRENCE, JOHN L.,
 LAWRENCE, NEWBOLD T.,
 LAWRENCE, R. WARREN,
 LAWRENCE, TOWNSEND,
 LAWRENCE, W. V.,
 LEA, CHARLES M.,
 LEARNED, WALTER,
 LEDLIE, GEORGE,
 LEDOUX, DR. ALBERT R.,
 LEDYARD, EDGAR M.,
 LEDYARD, MRS. LEWIS C.,
 LEE, MRS. FREDERIC S.,
 LEE, GEORGE C.,
 LEE, WILLIAM H. L.,
 LEFFERTS, MARSHALL C.,
 LEGGETT, WARREN F.,
 LEHMAIER, JAMES M.,
 LEHMAN, MEYER H.,
 LELAND, WILFRED C.,
 LE ROY, EDWARD A.,
 LESTER, GEORGE BACON,
 LETKEMANN, H. V.,
 LEVER, S. H.,
 LEVY, EMANUEL,
 LEWIS, MRS. AUGUST,
 LEWIS, FREDERIC ELLIOTT,
 *LEWIS, PERCY PYNE,
 LEWIS, DR. WILLIAM J.,
 LEWISOHN, ABOLF,
 LIEB, JR., J. W.,
 LIENHART, R. H.,
 LINCOLN, LOWELL,
 LITCHFIELD, E. HUBERT,
 LITCHFIELD, EDWARD H.,
 LITCHTENSTEIN, PAUL,
 LIVINGSTON, WILLIAM S.,

LOBENSTINE, WILLIAM C.,
 LOEWI, HUGO V.,
 LOGAN, FRANK J.,
 LOOMIS, GUY,
 *LOOP, CHAS. L.,
 LORD, MRS. GEORGE DEFOREST,
 LOUNSBERY, MRS. RICHARD P.,
 LOW, ETHELBERT IDE,
 LOWE, WILLIAM,
 LOWELL, MISS CARLOTTA RUSSELL,
 LOWELL, JAMES B.,
 LOWNDES, D.D., THE REV. ARTHUR,
 LUCE, MRS. HARRY J.,
 LUDINGTON, C. H.,
 LUDLUM, C. A.,
 LUDLOW, REAR-ADMIRAL NICOLL,
 LUEDER, A.,
 LUKE, DAVID L.,
 LUMMIS, MISS ELIZA O'B.,
 LUSK, PROF. GRAHAM,
 LUTTGEN, WALTHER,
 LYMAN, FRANK,
 LYON, EMORY S.,
 McALPIN, MRS. CHARLES W.,
 McALPIN, JR., MRS. D. HUNTER,
 McALPIN, GEORGE L.,
 McBRIE, MRS. HERBERT,
 MCBURNEY, CHARLES I.,
 MCBURNEY, HENRY,
 McCAGG, LOUIS B.,
 McCALL, RICHARD,
 McCLINTOCK, GILBERT S.,
 MCCOY, DR. JOHN,
 MCCREA, W. S.,
 MCCREERY, ROBERT S.,
 McCULLOH, J. S.,
 *McCutcheon, JAMES,
 McGUIRE, JOSEPH H.,
 McKEEVER, J. LAWRENCE,
 McKIM, JOHN A.,
 McKIM, LEROY,
 McLANE, THOMAS S.,
 McLEAN, JAMES,
 McLEAN, MARSHALL,
 McMurtry, G.,
 MacFarlane, WALLACE,
 MACK, ARTHUR C.,
 MACY, GEORGE H.,
 MAGEE, JOHN,
 MAGER, F. ROBERT,
 MAIN, FRANK H.,
 MALE, FRANCIS S.,
 MALI, PIERRE,
 MALI, MRS. PIERRE,
 MANECKE, DR. PHILIP,
 MANICE, MRS. WILLIAM,
 MANN, WILLIAM D'ALTON,
 MAPES, JR., DANIEL,

*DECEASED.

MAPES, ERNEST S.,
 MARRBURY, MISS ELIZABETH,
 MARCUS, GEORGE E.,
 MARKHAM, ROBERT D.,
 MARKOE, HARRY,
 MARKOE, DR. J. W.,
 MARSH, C. P.,
 MARSHALL, A. W. W.,
 MARSTON, EDWIN S.,
 MARTIN, JR., BRADLEY,
 *MARTIN, HOWARD T.,
 *MARTINEZ, MIGUEL R.,
 MARYE, R. V.,
 MASON, CHARLES N.,
 MASTEN, ARTHUR H.,
 MASTERS, MISS,
 MATHER, SAMUEL,
 MAYER, JESSE,
 MAYER, MRS. JOSEPH B.,
 MAYER, MARCUS,
 MAYNARD, DUFF G.,
 MAYNARD, MRS. WALTER E.,
 MEEKER, HENRY E.,
 MEEM, JAMES C.,
 MEHL, HENRY,
 MEINHARD, MORTON H.,
 MELOY, ANDREW D.,
 MENN, HOWARD,
 MERRITT, HENRY C.,
 MEYER, DR. GEORGE W.,
 MEYER, MISS HELOISE,
 MEYROWITZ, EMIL B.,
 MILBURN, JOHN G.,
 MILLER, MRS. CHARLES E.,
 MILLER, MRS. CYRUS C.,
 MILLER, MRS. ELIZABETH C. T.,
 MILLET, MRS. F. D.,
 MILLS, ABRAHAM G.,
 MILLS, ANDREW,
 MILLS, FREDERIC C.,
 MILMINE, C. E.,
 MONTANT, ALPHONSE,
 MONTGOMERY, CARLETON,
 MOORE, CASIMIR DER.,
 MOORE, JR., CHARLES ARTHUR,
 MOORE, MISS K. T.,
 MOORE, MRS. RUSSELL WELLMAN,
 MOORHEAD, HORACE R.,
 MORAWETZ, VICTOR,
 MORGAN, MISS ANNE T.,
 MORGAN, MISS C. L.,
 MORGAN, MRS. EDITH P.,
 MORGAN, EDWIN D.,
 MORGAN, MRS. J. B.,
 MORGAN, MRS. J. PIERPONT,
 MORGAN, JUNIUS S.,
 MORGAN, MRS. JUNIUS S.,
 MORGAN, WM. FELLOWES,

MORGAN, JR., WILLIAM FORBES,
 MORRIS, DAVE H.,
 MORRIS, GOUVERNEUR,
 MORRIS, JOHN JACOB,
 MORSE, MRS. GEORGE H.,
 MORTIMER, RICHARD,
 MORTON, A. L.,
 MOSLE, A. HENRY,
 MOTLEY, JAS. M.,
 MOTT, HENRY C.,
 MOWBRAY, H. SIDDON,
 MUELLER, CHARLES F.,
 MUHLFELD, FRANK J.,
 MUNROE, HENRY W.,
 MUNSEY, FRANK A.,
 MURGATROYD, JOHN,
 MYERS, WILLIAM S.,
 NAEGELI, ROBERT,
 NEILSON, DR. HOWARD S.,
 NEILSON, WALLACE PLATT,
 NELSON, JAMES W.,
 NESMITH, JAMES,
 NEUMOEGEN, M. L.,
 NEUMOEGEN, MRS. M. I.,
 NEUSTADT, MRS. S.,
 NICHOLS, ACOSTA,
 NICHOLS, JOHN W. T.,
 NICKERSON, HOFFMAN,
 NILES, MISS FLORILLA,
 NILES, ROBERT L.,
 NOLKER, ROBERT E.,
 NORRIE, MISS MARY,
 NORMAN, MRS. BRADFORD,
 NORMAN, MISS MABEL,
 NORTH, GEORGE B.,
 NORTON, CHARLES D.,
 NORTON, G. FREDERICK,
 NORTON, W. P.,
 OBERMAYER, CHARLES J.,
 OCHS, ADOLPH S.,
 O'CONNELL, DR. J. H.,
 OETTINGER, DR. P. J.,
 OFFERMAN, JOHN,
 OGDEN, CHARLES W.,
 OHMEIS, JOHN,
 OHMEIS, P. M.,
 OLCOTT, DUDLEY,
 OLCOTT, 2ND, DUDLEY,
 OLIN, MRS. STEPHEN H.,
 OLNEY, ELAM WARD,
 OLYPHANT, ROBERT,
 OLYPHANT, ROBERT M.,
 ONATIVIA, JOHN VICTOR,
 OPENHYM, GEORGE J.,
 OPPENHEIMER, DR. HENRY S.,
 ORDWAY, SAMUEL H.,
 OSBORN, MRS. HENRY FAIRFIELD,
 OTTINGER, MARX,

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OUTERBRIDGE, MRS. ADOLPH J.,
 OUTERBRIDGE, DR. PAUL,
 PACKARD, MRS. E. WINSLOW,
 PAGE, WILLIAM H.,
 PAINTER, DR. H. McM.,
 PALMER, DR. T. S.,
 PARISH, WAINWRIGHT,
 PARKER, A. W.,
 PARKER, EDWARD LUDLOW,
 PARKER, JUNIUS,
 PARKER, WINTHROP,
 PARPART, WILLIAM E.,
 PARSONS, EDWIN,
 PARSONS, MISS GERTRUDE,
 PARSONS, H. DEB.,
 *PARSONS, JOHN E.,
 PARSONS, MISS MARY,
 PARSONS, WILLIAM BARCLAY,
 PARTRIDGE, EDWARD L.,
 PATON, DAVID,
 PATTERSON, HENRY STUART,
 PATTERSON, T. H. HOGE.,
 PAUL, JOHN J.,
 PAYNE, MRS. HENRY W.,
 PEABODY, STEPHEN,
 *PEARSON, F. S.,
 PEARSON, MRS. FREDERICK,
 PEASLEE, MISS F. RANDOLPH,
 PECK, CHARLES E.,
 PECK, LEICESTER O.,
 PECKHAM, MISS MARIE LOUISE,
 PEGRAM, EDWARD S.,
 PENDLETON, FRANCIS KEY,
 PENFOLD, EDMUND,
 PENROSE, DR. CHARLES B.,
 PERCIVAL, L. A. D.,
 PERKINS, MRS. EDWARD,
 PERKINS, GEORGE E.,
 PERKINS, ROBERT P.,
 PERRY, JOHN P. H.,
 PERRY, WILLIAM A.,
 PETER, EMIL,
 PETERS, MRS. CHARLES G.,
 PETERS, SAMUEL T.,
 PETERS, WILLIAM RICHMOND,
 PFEIFFER, CURT G.,
 PFEIFFER, GEORGE,
 PHELPS, MRS. ANSEL,
 PHELPS, MRS. CHARLES,
 PHELPS, DR. GOUVERNEUR M.,
 PHILLIPS, WILLIAM W.,
 PIATTI, DR. VIRGIL C.,
 PICKHARDT, CARL,
 PIEL, GOTTFRIED,
 PIEL, MICHAEL,
 PIERREPONT, MISS ANNA JAY,
 PIERREPONT, R. STUYVESANT,
 PIERSON, GEN. J. FRED,

PIKE, R. W.,
 PILLOTT, P. STUYVESANT,
 PINCHOT, GIFFORD,
 PLATT, CHARLES H.,
 PLATT, FRANK H.,
 PLATT, HENRY B.,
 PLATTEN, J. W.,
 *PLAUT, ALBERT,
 PLYMPTON, GILBERT M.,
 POLK, DR. WILLIAM M.,
 POLLOCK, GEORGE E.,
 POMROY, MRS. H. K.,
 POOR, HENRY V.,
 POPE, FREDERICK W.,
 POPE, G. D.,
 PORTER, ALEXANDER J.,
 PORTER, HORACE,
 PORTER, LOUIS, H.,
 PORTER, WILLIAM L.,
 POST, ABRAM S.,
 POST, MRS. CHARLES ALFRED,
 *POST, EDWARD C.,
 POST, JR., GEORGE B.,
 POTTER, MISS BLANCHE,
 POTTER, EDWARD CLARKSON,
 POTTER, FREDERICK,
 POTTER, ORLANDO B.,
 POTTER, R. BURNSIDE,
 POTTER, MRS. R. BURNSIDE,
 POTTS, JESSE W.,
 POTTS, WILLIAM BREVOORT,
 PRATT, ALBERT H.,
 PRATT, GEORGE D.,
 PRATT, H. L.,
 PRATT, JOHN T.,
 PRATT, MRS. JOHN T.,
 PRENTICE, JOHN HILL,
 PRENTISS, GEORGE H.,
 PRENTISS, MISS HENRIETTA,
 PRESS, T. CHANNON,
 PRESTON, VERYL,
 PRIDDY, LAWRENCE,
 PRIME, MISS CORNELIA,
 PRINCE, EDWARD S.,
 PRINCE, PROF. J. DYNELEY,
 PROCTER, WILLIAM,
 PROCTOR, THOMAS R.,
 PROCTOR, WM. ROSS,
 PRYER, CHARLES,
 PULITZER, MRS. JOSEPH,
 PULSIFER, MRS. N. T.,
 PUTNAM, H. ST. CLAIR,
 *PUTNAM, J. BISHOP,
 PUTNAM, WILLIAM A.,
 PYLE, D. H. McALPIN,
 PYNE, MRS. M. TAYLOR,
 PYNE, 2ND, PERCY R.,
 QUINCY, CHARLES F.,

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QUINTARD, DR. EDWARD,
 RANDALL, FRANK E.,
 RANDOLPH, EDMUND D.,
 RANDOLPH, WILLIAM W.,
 RANFT, RICHARD,
 RANGER, STANLEY,
 RASCOVAR, JAMES,
 RASMUS, W.,
 RASMUS, W. T.,
 RATHBORNE RICHARD C.,
 RAUCH, WILLIAM,
 RAYMOND, H. E.,
 READ, WILLIAM A.,
 REDMOND, MISS E.,
 REDMOND, MRS. HENRY S.,
 REID, JOHN,
 REID, OGDEN MILLS,
 REID, MRS. OGDEN MILLS,
 REIMER, OTTO EUGENE,
 *REINCKE, E. A.,
 REINHARDT, GEORGE N.,
 REMSEN, CHARLES,
 RENSHAW, HOWARD PRICE,
 REYNOLDS, E. B.,
 RHETT, MISS FLORENCE,
 *RHINELANDER, CHARLES E.,
 RHINELANDER, PHILIP,
 RHOADES, MRS. J. HARSEN,
 RICE, MISS MILDRED G.,
 RICE, MRS. WILLIAM B.,
 RICHARD, EDWIN A.,
 RICHARD, MISS ELVINE,
 RICHARDS, EBEN,
 RICHARDS, E. O.,
 RICHARDSON, MRS. C. TIFFANY,
 *RIDDER, HERMAN,
 RIGGS, GEO. C.,
 RIPLEY, JULIEN A.,
 RIPPE, MRS. E. J.,
 RIVES, GEORGE L.,
 ROBBINS, CHANDLER,
 ROBBINS, MRS. HELEN, C.,
 ROBERTS, G. THEODORE,
 ROBERTS, MISS M. M.,
 ROBERTSON, ALBERT,
 *ROBERTSON, JULIUS,
 ROBERTSON, R. H.,
 ROBINSON, MRS. DOUGLAS,
 ROBINSON, EDWARD,
 ROBINSON, ELI K.,
 ROBINSON, G. H.,
 ROBINSON, MISS PAULINE,
 ROBISON, WILLIAM,
 ROCHE, MRS. BURKE,
 ROCKWOOD, WILLIAM H.,
 ROE, FRANK, O.,
 ROE, IRVING L.,
 *ROELKER, ALFRED,

ROGERS, E. L.,
 ROGERS, MRS. FRANCIS,
 ROGERS, HUBERT E.,
 ROGERS, JAMES H.,
 ROGERS, MRS. WILLIAM BEVERLEY,
 ROKENBAUGH, HENRY S.,
 ROLLE, AUGUSTUS J.,
 ROMBOUGH, JOHN B.,
 RONALDS, MRS. GEORGE L.,
 ROOSEVELT, MRS. HILBORNE L.,
 ROOSEVELT, MRS. JAMES,
 ROOSEVELT, MRS. J. W.,
 ROOSEVELT, W. EMLEN,
 ROOT, ELIHU,
 ROSE, MRS. A. SUMNER,
 ROTH, FREDERICK G. R.,
 ROTH, J. E.,
 ROTHLAUF, REV. ANTHONY J.,
 ROTHWELL, JAMES E.,
 ROWLAND, THOMAS,
 RUHE, LOUIS,
 RUHL, LOUIS,
 RUNYON, CARMAN R.,
 RUNYON, E. W.,
 RUPERT, JUSTUS,
 RUPPERT, JACOB,
 RUPPERT, MRS. JACOB,
 RUSSELL, ARCHIBALD D.,
 RUSSELL, DR. JOHN F.,
 RUSSELL, MRS. WILLIAM HAMILTON,
 RYAN, JOHN BARRY,
 RYAN, J. D.,
 RYLE, ARTHUR,
 RYLE, GRAHAM,
 SACHS, ARTHUR,
 SACKETT, MISS GERTRUDE T.,
 SAGE, JOHN H.,
 SAKS, ISADORE,
 SAMPSON, ALDEN,
 SAMPSON, CHARLES E.,
 SANDS, MISS ANNE A.,
 SANDS, BENJAMIN AYMAR,
 SANDS, MRS. BENJAMIN AYMAR,
 SATTERLEE, MRS. H. L.,
 SATTERWHITE, PRESTON P.,
 SANGER, MRS. RALPH,
 SARGENT, GEORGE LLOYD,
 SAUTER, FREDERICK,
 SAUTER, JR., FRED,
 SCHAAF, HERMANN,
 SCHAEFER, ANDREAS F.,
 SCHAEFER, EDWARD C.,
 SCHAEFER, HENRY,
 SCHANCK, GEORGE E.,
 SCHAUE, C. F.,
 SCHAUFFLER, DR. A. F.,
 SCHAUFFLER, MRS. A. F.,
 SCHEFER, CARL,

*DECEASED.

SCHENCK, HENRY DEB.,
 SCHIEFFELIN, MRS. H. M.,
 SCHIEFFELIN, WILLIAM JAY,
 SCHIRMER, RUDOLPH E.,
 SCHMELZEL, JAMES H.,
 SCHMELZEL, MISS JANE E.,
 SCHMIDT, ADOLPH, T.,
 SCHMIDT, WILLIAM H.,
 SCHNABEL, R. A.,
 SCHOLLE, A. H.,
 SCHRAG, CHARLES A.,
 SCHREITER, HENRY,
 SCHUMANN, JR., JOHN J.,
 SCHUYLER, MISS LOUISA LEE,
 *SCHWARCZ, MAX M.,
 SCHWARZ, HENRY F.,
 SCHARZIER, ALBERT J.,
 SCOFIELD, MISS MARION,
 SCOTT, DONALD,
 SCOTT, HON. FRANCIS M.,
 SCOTT, THOMAS BLYTHE,
 SCOTT, WILLIAM,
 SCOVILLE, MRS. JOHN H.,
 SCOVILLE, ROBERT,
 SCRIBNER, ARTHUR, H.,
 SCRIBNER, MRS. CHARLES,
 SCRYMSER, JAMES A.,
 SEAMAN, DR. LOUIS L.,
 SEDGWICK, ROBERT,
 SEE, A. B.,
 SELIGMAN, GEORGE W.,
 SELIGMAN, JEFFERSON,
 SENFF, MRS. CHARLES H.,
 SETON, ALFRED,
 SEXTON, LAWRENCE E.,
 SEYBEL, DANIEL E.,
 SHAPIRO, D.,
 SHEETS, DR. E. A.,
 SHEFFIELD, JAMES R.,
 SHEFFIELD, MRS. JAMES R.,
 SHELTON, MRS. CHARLES,
 SHIELDON, EDWARD W.,
 SHELTON, GEORGE R.,
 SHELTON, WILLIAM C.,
 SHEPARD, MRS. ELLIOTT F.,
 SHEPARD, FINLEY J.,
 SHILLABER, WM.,
 SHIPMAN, RICHARD D.,
 SHOEMAKER, HENRY W.,
 SHONNARD, HORATIO S.,
 SHONTS, T. P.,
 *SHURTLEFF, ROSWELL MORSE,
 SIBLEY, MRS. H. W.,
 SIEDENBURG, JR., REINHARD,
 SIEGEL, JACOB,
 SILLECK, JR., HENRY G.,
 SILLECK, JR., MRS. HENRY G.,
 SILLIMAN, HARPER,

SIMPSON, J. F.,
 SIMPSON, JOHN W.,
 SINCLAIR, MRS. JOHN,
 SINGER, ARTHUR J.,
 SKEEL, DR. FRANK D.,
 SKIDMORE, WILLIAM L.,
 SKINNER, M. P.,
 SLADE, FRANCIS LOUIS,
 SLAUGHTER, R. B.,
 SLOCUM, JR., H. J.,
 SLOCUM, J. J.,
 SMIDT, MRS. G. L.,
 SMIDT, THOS.,
 SMILEY, DANIEL,
 *SMILLIE, CHARLES F.,
 SMILLIE, JAMES C.,
 SMILLIE, RALPH,
 SMITH, DR. A. ALEXANDER,
 SMITH, AUGUSTINE J.,
 SMITH, MRS. CHARLES S.,
 SMITH, ELIAS D.,
 SMITH, ERSKINE M.,
 SMITH, MRS. F. HOPKINSON,
 SMITH, PIERRE J.,
 SMITH, ROBERT K.,
 SMITH, DR. SAMUEL,
 SMITHERS, CHARLES,
 SMITHERS, F. S.,
 SNOW, E. G.,
 SORCHAN, MRS. VICTOR,
 SPALDING, KEITH,
 SPARROW, MRS. EDWARD W.,
 SPEAR, JR., JAMES,
 SPEDDEN, FREDERIC O.,
 SPENCER, ALEXANDER H.,
 *SPENCER, EDWARDS,
 *SPENCER, LORILLARD,
 SPERRY, WILLIAM M.,
 SPEYER, MRS. JAMES,
 SPITZNER, GEORGE W.,
 SPOFFORD, MRS. J. L.,
 SPRAGUE, MRS. FRANK J.,
 SPRIGG, JUDGE CARROLL,
 SPRING, MISS ANNA RIKER,
 SPURR, E. W.,
 SQUIBB, DR. EDWARD H.,
 SQUIRE, EBEN H. P.,
 STAFFORD, WILLIAM FREDERICK,
 STAFFORD, MRS. WILLIAM FREDERICK,
 *STANDISH, MYLES,
 STANTON, JOHN R.,
 STAPLES, MRS. JOHN J.,
 STARR, LOUIS MORRIS,
 STEARNS, LOUIS,
 STEBBINS, JAMES H.,
 STEELE, MRS. CHARLES,
 STEIN, MRS. ALEXIS W.,
 STEINBECK, EDWARD,

*DECEASED.

STEINMETZ, JOHN A.,
 STEPHENS, OLIN J.,
 STEPHENS, RODERICK,
 STEVENS, ALEXANDER H.,
 STEVENS, FREDERIC W.,
 STEVENS, RICHARD,
 STEVENS, MRS. RICHARD,
 STEWART, MRS. PERCY HAMILTON,
 STEWART, WILLIAM R.,
 STILLMAN, CHAUNCEY,
 STILLMAN, MRS. C. C.,
 STILLMAN, JAMES A.,
 STIMSON, MRS. FREDERIC,
 STIMSON, DR. DANIEL M.,
 STOCKMANN, MISS MARIE F. C.,
 STOECKEL, CARL,
 STOKES, JAMES,
 STONE, MISS ANNIE,
 STONE, MISS ELLIE J.,
 STOUT, JOSEPH S.,
 STOW, GEORGE G.,
 STRAIGHT, WILLARD,
 STRANGE, A. B.,
 STRAUS, H. GRANT,
 STRAUS, PERCY S.,
 STRAUSS, CHARLES,
 STRAUSS, FREDERICK,
 STREAT, JAMES,
 STREET, W. A.,
 STRONG, JR., BENJAMIN,
 STRONG, RICHARD A.,
 STRONG, THERON G.,
 STROOCK, JOSEPH,
 STROOCK, LOUIS S.,
 STUART, ROBERT,
 STURGES, MRS. E. C.,
 STURGES, HENRY C.,
 SUCKLEY, MR. R. B.,
 SULLIVAN, MRS. JAMES,
 SUTRO, LIONEL,
 SUYDAM, JR., LAMBERT,
 SWAN, JAMES A.,
 SWANSON, DR. F. J.,
 SWENSON, S. A.,
 SWORDS, WILLIAM VOORHIS,
 TABER, MISS MARY,
 TAFT, HENRY W.,
 TAFT, WILLIAM HOWARD
 TAG, ALBERT,
 TAILER, EDWARD N.,
 TALCOTT, JAMES,
 TALMAGE, MRS. E. T. H.,
 TANENBAUM, MOSES,
 TATHAM, CHARLES,
 TAUSSIG, NOAH W.,
 TAYLOR, MRS. HENRY OSBORN,
 TAYLOR, HENRY R.,
 TAYLOR, JAMES B.,

TAYLOR, LLOYD,
 TAYLOR, MOSES,
 TAYLOR, ROBERT C.,
 TAYLOR, WILLIAM A.,
 TENNEY, C. H.,
 TERRY, MRS. JOHN T.,
 TERRY, JR., RODERICK,
 TERRY, WYLLYS,
 THACHER, ARCHIBALD G.,
 THACHER, MRS. GEORGE W.,
 THACHER, THOMAS,
 THAW, J. C.,
 THAYER, HARRY BATES,
 THOMAS, DR. ALLEN M.,
 THOMAS, MRS. HOWARD L.,
 THOMAS, JR., SETH E.,
 THOMPSON, FARRINGTON M.,
 THOMPSON, GIRAUD F.,
 THOMPSON, MRS. J. TODHUNTER,
 THOMPSON, WILLIAM BOYCE,
 THORLEY, CHARLES,
 THORNE, CHAS. STOCKTON,
 THORNE, MRS. EDWIN,
 THORNE, JONATHAN,
 THORNE, MRS. JONATHAN,
 THORNE, MRS. SAMUEL,
 THORNE, MRS. W. V. S.,
 THORNE, W. V. S.,
 THURBER, H. F.,
 TIERNEY, MYLES J.,
 TIFFANY, LOUIS C.,
 TILLEY, GEORGE D.,
 TILT, ALBERT,
 TILTON, JOSEPH W.,
 TIMKEN, J. HENRY,
 TIMMERMAN, HENRY G.,
 TIMPSON, JAMES,
 TOD, J. KENNEDY,
 TODD, H. H.,
 TODD, WALTER B.,
 TOLER, MRS. VIRGINIA W.,
 TOMBY, BORGFELDT,
 TONNELI, MRS. JOHN N.,
 TOWNSEND, MISS AMY C.,
 TOWNSEND, MRS. E. M.,
 TOWNSEND, EDWIN S.,
 TOWNSEND, HOWARD,
 TOWNSEND, ISAAC,
 TRIMBLE, MRS. RICHARD,
 TROESCHER, A. F.,
 TROWBRIDGE, FREDERICK K.,
 TUCKER, MRS. AGNES J.,
 TUCKER, CARLL,
 TUCKERMAN, ALFRED,
 TUCKERMAN, PAUL,
 TURNBULL, ARTHUR,
 TURNBULL, MRS. RAMSAY,
 TURNURE, GEORGE E.,

- TUSKA, BENJAMIN,
 *TUZO, HENRY FRANCIS,
 *TWEDELL, WILLIAM H.,
 TWEED, MRS. CHARLES H.,
 TWINING, E. S.,
 UHL, OSWALD W.,
 UNDERWOOD, WILLIAM LYMAN,
 UPMANN, CARL,
 VALENTINE, MRS. PATRICK A.,
 VALENTINE, DR. WILLIAM A.,
 VAN BEUREN, JR., FREDERICK T.,
 VANDERGRIFF, S. H.,
 VAN DER HOOFT, MRS. C. W.,
 VANDERLIP, FRANK A.,
 VANDERPOEL, AMBROSE E.,
 VANDERPOEL, MRS. JOHN A.,
 VAN DER SMISSEN, DR. G. J.,
 VAN DYKE, R. B.,
 VAN EMBURGH, D. B.,
 VAN GERBIG, BAREND,
 VAN INGEN, MRS. EDWARD,
 VAN INGEN, MRS. E. H.,
 VAN NORDEN, OTTOMAR H.,
 VAN NOSTRAND, B. T.,
 VAN SINDEREN, HOWARD,
 VAN WINKLE, EDGAR B.,
 VARGOE, HAROLD,
 VARIAN, WILBUR L.,
 VARIAN, MRS. WILBUR LINWOOD,
 VERNAY, ARTHUR S.,
 VESPER, KARL H.,
 VIETOR, THOMAS F.,
 VINCENT, FRANK,
 VOGEL, HERMAN,
 VON BERNUTH, JR., FRITZ,
 VON DREELE, WM. H.,
 VON GONTARD, MRS. ALEXANDER,
 VON LINGERKE, JUSTUS,
 VON ZEDLITZ, MRS. ANNA M.,
 VUILLEUMIER, DR. JULES A.,
 WAGSTAFF, MRS. ALFRED,
 WAGSTAFF, C. DUBOIS,
 WAINWRIGHT, MRS. J. HOWARD,
 WALBURN, JOSEPH,
 WALCOTT, FREDERIC C.,
 WALDO, R.,
 WALES, EDWARD H.,
 WALKER, BRYANT,
 WALKER, F. B.,
 WALKER, GUSTAVUS A.,
 WALKER, DR. JOHN B.,
 *WALLER, JR., ROBERT,
 WALLER, STEWART,
 WALSH, SAMUEL A.,
 WALTER, EDGAR,
 WALTER, MARTIN,
 WALTY, A. R.,
 WANNINGER, CHARLES,
 WARBURG, PAUL M.,
 WARD, ARTEMAS,
 WARD, MRS. GEORGE CABOT,
 WARDNER, HENRY STEELE,
 WARDWELL, ALLEN,
 WARREN, MRS. J. HOBART,
 WARREN, LLOYD,
 WASHBURN, THOMAS G.,
 WASHBURN, WM. IVES,
 WATERBURY, JOHN I.,
 WATERBURY, MISS,
 WATSON, CHARLES F.,
 WATSON, THOMAS J.,
 WATT, THOMAS L.,
 WEATHERBEE, MRS. EDWIN H.,
 WEBB, F. EGERTON,
 WEBB, J. GRISWOLD,
 WEBB, MRS. WILLIAM SEWARD,
 WEEKS, JAMES,
 WEIGLE, CHARLES H.,
 WEIL, RICHARD,
 WEINIG, BERNARD,
 WEIR, MRS. C. GOUVERNEUR,
 WEITLING, WILLIAM W.,
 WELLS, OLIVER J.,
 WERNER, C. H.,
 WESSEL, J. HENRY,
 WESSELL, ARTHUR L.,
 WEST, DR. WM.,
 WESTOVER, M. F.,
 WETMORE, EDMUND,
 WHEELER, WALTER S.,
 WHELOCK, MRS. G. G.,
 WHITE, A. M.,
 WHITE, HAROLD T.,
 WHITE, HORACE,
 WHITE, LEONARD D.,
 WHITEHOUSE, J. HENRY,
 WHITEHOUSE, NORMAN,
 WHITEHOUSE, WILLIAM F.,
 WHITING, DR. CHARLES A.,
 WHITING, MISS GERTRUDE,
 WHITMAN, CLARENCE,
 WHITMAN, JR., WILLIAM,
 WHITRIDGE, F. W.,
 WICKERSHAM, GEORGE W.,
 WIGGLESWORTH, HENRY,
 WILKINS, F. H.,
 WILLCOX, WM. G.,
 WILLIAMS, ALEX. S.,
 WILLIAMS, ARTHUR,
 WILLIAMS, DAVID,
 WILLIAMS, GEORGE L.,
 WILLIAMS, MRS. PERCY H.,
 WILLIAMS, JR., RICHARD H.,
 WILLIAMS, WALDRON,
 WILLIAMS, WILLIAM,
 WILLIAMS, WILLIAM H.

*DECEASED.

WILLIAMSON, MRS. BUTLER,
WILLIS, W. P.,
*WILLS, CHARLES T.,
WINGATE, GEO. W.,
WINTER, JULIUS,
WINTERROTH, MAJ. E. J.,
WINTHROP, JR., EGERTON I.,
WISNER, CHARLES,
WITHERBEE, FRANK S.,
WITTHAUS, DR. RUDOLPH A.,
WITTMANN, JOSEPH,
WOLF, ARTHUR D.,
WOLFF, EMIL,
WOOD, ARNOLD,
WOOD, GILBERT CONGDON,
WOOD, J. WALTER,
WOOD, WILLIAM CONGDON,
WOODHOUSE COMPANY, J. S.,
WOODRUFF, ALBERT C.,
WOODWARD, KENNETH N..

*WOODWARD, ROBERT B.,
WOODWARD, MRS. WM.,
WOOLLEY, C. M.,
WORCESTER, WILFRED J.,
WORK, BERTRAM G.,
WORRALL, P. B.,
WRIGHT, HAL,
WRIGHT, J. DUNBAR,
*WRIGHT, JOHN HOWARD,
WYCKOFF, DR. PETER BROWN,
WYCKOFF, MRS. PETER B.,
YOUNG, A. MURRAY,
ZABRISKIE, ANDREW C.,
ZABRISKIE, MISS ETHEL,
ZENTGRAF, REV. GEORGE J.,
ZINSER, AUGUST,
ZINSER, MRS. AUGUST,
ZINSER, JR., AUGUST,
ZINN, GEORGE,
ZOLLER, CHARLES,

Corresponding Members

GILFEDDER, T. P.,
GILLESPIE, T. H.,
JOHNSTON, SIR HARRY H.,

LESOUËF, W. H. DUDLEY,
MILLWARD, RUSSELL HASTINGS,
STURTEVANT, LIEUT. C. G.,

TYRWHITT, DRAKE G.,

Summary of Membership

Benefactors	6
Founders in Perpetuity	14
Founders	20
Associate Founders	5
Patrons	32
Life Members	282
Fellows	34
Annual Members	1,730
Honorary and Corresponding Members	15
	<hr/> 2,138

Qualifications for Regular Membership

Annual Members	\$ 10	Associate Founders	\$ 2,500
Life Members	200	Founders	5,000
Patrons	1,000	Founders in Perpetuity	10,000
Benefactors	\$25,000		

Form of Bequest

I do hereby give and bequeath to the "NEW YORK ZOOLOGICAL SOCIETY," of the City of New York,

.....

*DECEASED.



THE EFFECT OF A TYPICAL NEW YORK SNOW STORM
The Beaver Pond and adjacent forest in the Zoological Park completely smothered under a heavy fall of snow.

REPORT OF
THE EXECUTIVE COMMITTEE
TO THE BOARD OF MANAGERS.

The Executive Committee respectfully submit the following report to the Board of Managers for the year 1915:

It is the sad duty of your committee to report the death on Sunday, July 4, 1915, of Mr. Samuel Thorne, Vice-President of the Society. Mr. Thorne was one of the early members of the Board of Managers and has served on the Executive Committee since 1902, and as Vice-President of the Society since 1909. He was devoted to the interests of the Society, and contributed most generously to its general work and to the development of the Zoological Park.

The resolutions passed by your committee will appear at the end of this report.

MEMBERS.

Notwithstanding the unsettled conditions during the past year, 141 new members have been secured; 128 Annual Members and 13 Life Members. Resignations and deaths, however, offset this gain, so that the total membership remains practically unchanged. The membership as of January 1, 1916, is as follows:

Benefactors	6
Founders in Perpetuity	14
Founders	20
Associate Founders	5
Patrons	32
Life Members	282
Fellows	34
Annual Members	1,730
Honorary and Corresponding Members	15
<hr/>	
Total	2,138

ATTENDANCE.

The attendance at the Park and the Aquarium for 1915, as compared with 1914, has been as follows:

	Park	Aquarium
1914	2,020,433	2,029,707
1915	1,780,077	1,538,831

There appears to be no specific reason for the decrease in the attendance at both institutions as noted above, other than the war in Europe.

The total annual cost to the City for the maintenance of these two institutions for the year 1915 is .074 cents per visitor.

COLLECTIONS AT THE PARK.

A census of the animals in the Zoological Park, taken January 1, 1916, is as follows:

	January 1, 1915		January 1, 1916	
	<i>Species</i>	<i>Specimens</i>	<i>Species</i>	<i>Specimens</i>
Mammals	204	586	211	636
Birds	811	2,753	813	2,773
Reptiles	164	1,014	157	791
	<hr/>	<hr/>	<hr/>	<hr/>
	1,179	4,353	1,181	4,200

Gunda.—In June, upon the recommendation of Dr. Hornaday, and after full consideration by your committee, the death of the large male Indian elephant Gunda was authorized. Instead of improving, as was hoped, the elephant's state of erotic frenzy had become worse. For the first time in his life, Gunda refused to take food, and his desire to kill a keeper became a mania. On Tuesday morning, June 22, 1915, Mr. Carl E. Akeley of the American Museum of Natural History shot Gunda through the head, producing instantaneous paralysis of the brain.

The skeleton and the skin have been presented to the Museum, and the soft anatomy to the College of Physicians and Surgeons for use in research work. Certain available portions of the carcass were used as food for the animals.

Gunda arrived at the Zoological Park in May, 1904, as the gift of Col. Oliver H. Payne. For a short time he was used as a riding animal, under careful supervision, but his temper in-

creased with age, and he was finally confined to his cage and yard. The execution of Gunda was ordered by your committee with reluctance, but inasmuch as the animal was not enjoying life, and did not seem likely to do so more than half of each year, it was not kindness to prolong his existence, entirely aside from the question of danger to his attendants.

African Elephant Congo.—During October the African elephant Congo at the Park, became disabled with neuritis in his fore legs and suffered severely. On November 3, 1915, therefore, upon the recommendation of Dr. Hornaday, the death of this animal was authorized. He was shot by Mr. Akeley, and his remains have been sent to the American Museum and to the College of Physicians and Surgeons.

Alaskan Bear.—On October 23, 1915, Dr. Hornaday reported that the hip of one of the Alaskan bears, sixteen years old, had been shattered by an accidental fall during the summer, and was incurable. This animal was thereupon shot.

Barbary Lion Sultan.—After having lived thirteen years in the Zoological Park, and attained an age of nearly eighteen years (four years more than the ordinary duration of life of a lion in captivity), our Barbary lion Sultan, was chloroformed on June 8, 1915, on account of old age and general disability. Unfortunately, his skin was in such poor condition that it was not fit to mount. The head, however, will be mounted, and placed in the Administration Building.

Gorilla.—Dinah, the female gorilla, after being in the possession of the Society for two years, died on August 3, 1915. The cause of her death was exhaustion from starvation, malnutrition and rickets. During the last two weeks of her life she was offered at least twenty different kinds of food, but ate practically nothing save oranges and a little oatmeal.

General.—The health of the animals continues good and there have been no losses of moment other than those reported above.

Owing to the European war and to the small balance available for the purchase of animals, few acquisitions of great importance have been received during the year.

A special subscription of \$500 has been received from the Junior Auxiliary, through Mrs. Richard Trimble, with which a lioness named Judy was purchased. The animal is an excellent specimen and is now on exhibition at the Park.

Early in the spring a large consignment of South American birds and mammals was offered to the Society by the Zoological Garden of Pará, Brazil. Many of the species offered were rare and highly desirable. The opportunity to secure valuable specimens and also to establish a permanent source of supply, was availed of by sending Curator Beebe to Pará. The total expenditure was \$2,342.30, which was borne by the Animal Fund.

Mr. Beebe returned to New York on May 29, 1915, bringing 44 mammals, 63 birds, 17 reptiles, and a few rare and curious fishes, all in excellent condition. These groups are exhibited as a special South American feature in the Primate and Small-Mammal Houses, the Aquatic-Bird House and the Reptile House.

A New Exhibit.—Assistant Curator Crandall has brought together and installed at the eastern side of Baird Court, a large collection of appliances designed to encourage the return of our native birds. It consists of nest boxes of many kinds, food-tables and bird houses. Each specimen is fully labelled with its trade name, name and address of the maker and the price.

COLLECTIONS.

A census of the exhibits at the Aquarium, taken January 1, 1916, shows the following results:

	January 1, 1915		January 1, 1916	
	<i>Species</i>	<i>Specimens</i>	<i>Species</i>	<i>Specimens</i>
Fishes	146	2,876	140	3,186
Reptiles	24	130	23	95
Amphibia	9	109	14	166
Invertebrates	18	2,051	21	2,238
Mammals	2	3	2	3
	<hr/>	<hr/>	<hr/>	<hr/>
	199	5,169	200	5,688

The collections at the Aquarium are in good condition. Numerous fresh-water fishes have been secured by exchange with the Philadelphia Aquarium, and by collecting in local waters. Arrangements have also been made with the Booth Steamship Line for a collection of large turtles from the upper Amazon, to be delivered in January, 1916.

By special arrangement with the aquariums in Boston and Philadelphia, a shipment of 600 tropical fishes was brought from Key West, Florida, the New York Aquarium undertaking the

collecting and shipment of the fishes, while the other two institutions paid the expenses. This has given the Aquarium 200 tropical fishes without any cost except the labor of the foreman who made the trip, and cartage in New York.

A penguin from southern Chili, presented to the Society, has been a very attractive exhibit and seems to be thriving. It has the freedom of the sturgeon pool in the daytime, and at night is kept in an open pen on the gravel roof.

Mr. J. K. Nye presented four new porpoises to the Society, two of which were young and soon died. The other two are doing well. The dead porpoises were sent by special request to the biological department of Princeton University as the gift of the Society.

The last of the porpoises which had been on exhibition at the Aquarium for twenty-one months, died during the month of August, owing to the unusually bad conditions of the harbor water.

John J. DeNyse.—Mr. John J. DeNyse, Collector at the Aquarium and one of the oldest employees, became incapacitated during the year as the result of a stroke of paralysis, was retired under the Pension Plan, and died on December 29, 1915.

Pathologist.—Upon the recommendation of Dr. Townsend, Director of the Aquarium, Dr. George A. MacCallum of the College of Physicians and Surgeons, who is doing some very valuable work at the Aquarium on parasites, has been appointed Pathologist to the Aquarium.

Assistant Director.—Dr. Raymond C. Osburn has tendered his resignation as Assistant Director of the Aquarium to take the chair of Biology in the New Connecticut College for Women at New London. Your committee lose his services with much regret.

Mr. Chapman Grant has been engaged with the title of Curator of Fresh-Water Collections.

New Aquarium.—The model of the new Aquarium Building has been moved from the American Museum of Natural History, and is now on exhibition at the Aquarium.

Repairs.—Certain repairs being necessary to the Aquarium Building, an application was made by your committee to the Board of Aldermen for an issue of Revenue Bonds for the following purposes:



YAK CALF AND MOTHER
This is the second calf born. The herd now numbers four specimens.

1. Repairs to the roof of Building necessary to make it watertight.....	\$1,500.00
2. Repairs to archway over rear door.....	200.00
3. Resurfacing of outer walls now in a very bad condition	1,000.00
4. Installation of ventilation system to exhaust foul air	800.00
	<hr/>
	\$3,500.00

The sum of \$2,000 was granted for the first three of the above items, and work is now under way.

A contract has been let for necessary repairs to the tile flooring and also for the painting of the entire interior of the main hall and the upper and lower offices. The present ventilating ducts have also been extended and arrangements made for more light in the office stairway. The annual lining of the furnaces with brick has been done at a cost of \$310, and the iron work in the building has been thoroughly scraped and painted by the Aquarium forces.

The most important improvement during the year has been the installation of filters for purifying the Harbor water used in the floor pools for seals, porpoises and large fish. Being of low salinity and polluted with sewage, New York Harbor water is very unsatisfactory for aquarium purposes.

MAINTENANCE.

Park.—The sum of \$200,000 provided by the City for the maintenance of the Zoological Park for the year 1915, proved sufficient and the year closed without a deficit. The sum of \$197,074.35 has been appropriated for the year 1916. This reduction of \$2,925.65 is an arbitrary cut made by the City authorities in the interest of general economy and will make it difficult for the Society to maintain the Park during the year without a deficit.

Aquarium.—The sum of \$47,000 provided by the City for the maintenance of the Aquarium for the year 1915, proved sufficient to close the year without a deficit. A similar amount has been granted for the year 1916.

FINANCES.

Owing to the policy of your committee of keeping expenditures within our known resources the Society closes the year in a fair financial position, despite the unsettled conditions of the past year. The balances to the credit of the several funds as of December 31, 1915, are as follows:

Income Account	\$23,340.22
Animal Fund	5,198.31
Cadwalader Animal Fund.....	788.89
Endowment Fund (uninvested).....	1,972.80
Stokes' Bird Fund.....	277.29
Library Fund	94.68
National Collection of Heads and Horns.....	320.36
Wild Life Protection Fund.....	648.64
Improvement and Repair Account.....	1,762.36
Tropical Research Fund.....	5,000.00
Total	\$39,403.55

Pension Fund Income Account:

Farmers' Loan and Trust Co.....	\$4,595.77
Corn Exchange Bank (Bronx)	372.68
	<hr/>
	\$4,968.45

The above balances are in the Farmers' Loan and Trust Company, and upon the recommendation of Mr. Percy R. Pyne, Treasurer, said Trust Company has been appointed Assistant Treasurer of the Society, to take effect January 1, 1916, and is to be vested with the same powers and duties as those now possessed by the Treasurer. This will greatly facilitate the work of the Treasurer's Department.

INCOME ACCOUNT.

The general income of the Society, including that from the Endowment Fund, was insufficient during the year to meet current expenses, and it was necessary to use a portion of the cash balance on hand at the beginning of the year.

The annual cash subscription of \$3,640 to the Pension Fund, which is taken from the general income of the Society, is responsible for this deficit.

The balance of the Society's subscription to this fund, which totals \$8,000, is made up by the income from the fund of \$100,000

provided by Mr. Andrew Carnegie. Relief from this annual drain will be sought during 1916, as well as an increase in the membership and in the Endowment Fund.

During the year the income from the Endowment Fund, aggregating \$14,632.80 was transferred to this fund, as well as the accumulation of balances from previous years, aggregating \$6,206.32, thus closing out the Endowment Fund Income Account. With these transfers the Income Account closes the year with a credit balance of \$23,340.22.

ANIMAL FUND.

The falling off in the privileges at the Park, and the use of gate receipts for needed repairs, resulted during the year in the depletion of the Animal Fund. A transfer was thereupon made of the available funds in the Privilege Department in the amount of \$5,000, which was only sufficient to purchase the necessary renewals in the collections. Your committee, therefore, have authorized the raising of a fund of \$10,000 for the purchase of animals during the year 1916. To date the following subscriptions have been received:

Emerson McMillin	\$1,000.00
Ogden Mills	1,000.00
Henry M. Tilford	500.00
Lispenard Stewart	500.00
Watson B. Dickerman.....	500.00
Grant B. Schley.....	500.00
Edward S. Harkness	250.00
George C. Clark	250.00
	<hr/>
	\$4,500.00

The sum of \$5,500 additional must be provided in order to maintain the Park collections on their present basis. The balance to the credit of this fund on December 31, 1915, amounted to \$5,198.31.

ENDOWMENT FUND.

On June 29, a payment of \$13,750 in cash was made on account of the bequest left to the Society by Mrs. Morris K. Jesup, deceased. It is probable that the balance, amounting to \$11,250, will be received when the market conditions for the sale of securities in the estate are more favorable.

The cash received has been credited to the Endowment Fund and invested in the following securities:

\$13,400 New York City 4½% Bonds due 1965.

The bequest of \$1,000 left to the Society by Mr. Jacob Langeloth, deceased, a former Annual Member, has also been paid, and the money credited to the Endowment Fund.

With the Life Membership fees received during the year the Endowment Fund now amounts to \$340,312.

This fund is invested in securities yielding net income at the average rate of 4.55% per annum.

On December 31, 1915, there was a small uninvested cash balance of \$1,972.80 on hand.

CADWALADER ANIMAL FUND.

This fund consists of the income from the fund of \$20,000 bequeathed to the Society by Mr. John L. Cadwalader, deceased, the income of which is to be used for the purchase of animals for the Park. On January 1, 1915, there was a cash balance of \$188.89; the income during the year amounted to \$1,000, and animals at the total cost of \$400 have been purchased. This fund closes the year with a cash balance of \$788.89.

The principal fund has been invested in twenty Illinois Central and Chicago, St. Louis & New Orleans joint 5% bonds, at par.

STOKES' BIRD FUND.

The income from this fund, which consists of \$5,000 bequeathed to the Society by the late Miss Caroline Phelps Stokes, is devoted to the protection of bird life throughout the country.

On Jan. 1, 1915, there was a balance on hand of \$134.69 and during the year income was received in the amount of \$200. The expenditures have only amounted to \$57.40, leaving a cash balance on hand December 31, 1915, of \$277.29.

LIBRARY FUND.

The Library Fund is supported by transfers from the General Income account of the Society. During the year one such transfer was made of \$500, which with the balance of \$146.57 on hand January 1, 1915, made a total of \$646.57 available for expenditure. Books, periodicals, pamphlets, etc., have been purchased to the extent of \$551.89, and the account shows a balance of \$94.68 on December 31, 1915.

NATIONAL COLLECTION OF HEADS AND HORNS.

The only sources of income for this fund are transfers from the General Income Account of the Society, and private subscriptions. Two transfers of \$500 each were made during the year, and private subscriptions aggregating \$65 have been received, which with the balance of \$280.27 on hand January 1, 1915, made a total of \$1,345.27 available for expenditure.

Heads and horns at a total cost of \$1,024.91 have been purchased and the account closes the year with a balance of \$320.36.

WILD LIFE PROTECTION FUND.

The expenditures against this fund during the year have been nominal and amounted to \$67.56. The balance on hand January 1, 1915, was \$517.45 and receipts in the amount of \$198.75 have been received from the sale of "Our Vanishing Wild Life." This fund closes the year with a cash balance of \$648.64.

PARK IMPROVEMENT AND REPAIR FUND.

A schedule of repairs and improvements at the Park was prepared for the year 1915 and approved by your committee, at an estimated cost of \$10,000.

The funds for this work are derived from gate receipts, which during the past year amounted to \$9,669.03, \$330.97 below the estimated figure of \$10,000. The schedule of repairs, etc., approved at the beginning of the year was therefore reduced accordingly. Nevertheless, extensive repairs have been made to the roofs and gutters of the Deer Barns and the Buffalo Shed, Goose and Pheasant Aviaries, Large Bird House, large Shelter Pavilion, miscellaneous heating repairs and a large amount of work on walks and roads. This work will be continued during 1916.

CARNEGIE PENSION FUND.

The fund of \$100,000 received from Mr. Andrew Carnegie has been invested in securities yielding net income at the average rate of 4.38% per annum. This income, together with the cash subscription from the general income of the Society, represents the total subscription of the Society to the Pension Fund



HEAD OF AN AFRICAN BLACK RHINOCEROS
Purchased for the National Collection of Heads and Horns.

annually, viz., \$8,000, which is a little more than twice the amount subscribed by employees. Your committee hope during the year 1916 to be able to increase the principal of the Pension Fund so that it will not be necessary for the Society to make this annual cash subscription, which during 1915 amounted to \$3,415. Experience has shown that this annual drain on the Society, if continued, will greatly cripple its work.

The pension plan during the year has worked very smoothly, and a full statement from the Pension Board appears later in this report.

During the year employees have paid in to the Pension Fund Income Account \$3,172.18, and the Society has paid \$8,000. On December 31, 1915, there was a cash balance on hand of \$15,139.91, of which \$10,171.46 has been invested in quickly convertible securities.

OVERDRAFTS.

Under the contract with the City it is necessary for the Society to advance funds for the purchase of maintenance supplies and pay rolls at the Park and the Aquarium, reimbursements being made by the City from time to time. When the balances to the credit of the different funds of the Society in the Farmers' Loan and Trust Company are low, it is probable that the above procedure will cause an overdraft, as has frequently happened in former years. To provide against this contingency your committee have authorized the Treasurer to deposit with the Farmers' Loan and Trust Company, securities belonging to the Society in the amount of \$50,000, to be held as a guarantee against overdrafts which may be made from time to time upon the account of the Society.

CORPORATE STOCK.

The entire issue of Corporate Stock authorized by the City authorities in 1914 in the amount of \$18,425, and which had been held up, was released during the year, and with the balance of \$7,518.32 already available for the Animal Hospital, is as follows:

Construction of a Hospital Building to be located in the Service Yard.....	\$22,518.32
Six new drinking fountains.....	600.00

New paint and oil storage building	300.00
Poultry Breeding Houses	1,400.00
Construction of a steel sliding door and strengthening the steel fence at the Elephant House	1,125.00

Note—This amount was originally authorized for the "erection of a steel fence on 180th Street, east of Bronx River," but upon request was changed to the above.

\$25,943.32

All this work practically has been completed.

On April 9, the following application was made for an additional issue of corporate stock:

1. Fund for the construction of a house for Anthropoid Apes	\$70,000.00
2. Fund for the development and protection of the Park to the East of Boston Road	10,000.00
3. Fund for the treatment of the bottom of the Wild Fowl Pond	5,000.00
4. Fund for new concrete dock at the Boat House	3,000.00
5. Fund for Soda Pavilion in front of the Reptile House	2,000.00
6. Emergency Fund for planting, walks, fencing yards, small installations, etc., and other permanent improve- ments	5,000.00
	<hr/>
	\$95,000.00

Of this application, only the sum of \$3,000 has been granted for the installation of a new bottom for the Wild Fowl Pond. This work was imperatively necessary owing to the foul condition of the pond. It is improbable that any additional funds will be available for some time owing to the financial condition of the City.

BOAT HOUSE DOCK.

For several years your committee have, without avail, endeavored to secure an appropriation from the City authorities for repairs to the Boat House dock at the Park. The repairs are now imperatively necessary, and as there was an opportunity to get the fill and stone needed without cost, the construction

of a new concrete dock at the expense of the Privilege Department was authorized. This work consists of the erection of a concrete wall, the filling in of the space between the wall and the shore line and the placing on of a concrete surface. It is estimated that the total cost will be \$3,000. The expenditure of \$481.41 has been incurred during 1915, and the balance is to be charged against 1916.

ELEPHANT YARDS.

After a long delay, funds at last became available for additions to certain elephant fences. The two southwesterly elephant yards at the Elephant House have been strengthened by means of heavy steel braces behind the posts and railroad iron on the top bar of these fences, and are now strong enough to hold the largest and most mischievous elephants.

ELEPHANT HOUSE.

During 1911 and 1912 great injury was done to the Elephant House by leakage, resulting from the imperfect condition of the roof. The building was constructed by Nesbit & Co., for the City. This corporation refused to make good the damage when requested to do so, and suit was thereupon brought by the City with the assistance of the Society, against Nesbit & Co., and the surety on their bond. Recovery was had in the amount of \$4,500, of which \$2,250 was received in cash, and \$2,250 in an approved claim against the People's Surety Company. This is the first time that the City has actually collected damages against a city contractor for defective work in the Park, and it is hoped the result will be a warning to all who attempt to evade strict compliance with contracts.

In the meantime, the repairs necessary had been made under an additional appropriation from the City, at a cost of \$5,865.

ANIMAL HOSPITAL.

During the year, the contract for the heating work in the Animal Hospital building was awarded in the amount of \$1,337, which with the general contract \$15,300, the plumbing contract, \$800, and the architects' commissions, about \$900, will make the total cost of this building \$18,337. The amount available for this work is \$22,518.32. The balance will be used for the construction of the necessary yards.



CANADA GOOSE AND GOSLINGS
The offspring of several mothers gathered together and followed one old bird.

PURIFICATION OF AIR IN BUILDINGS AT PARK.

In an attempt to purify the foul air and eradicate animal odors in the different buildings at the Park, your committee authorized the installation of ozone machines. These machines are operated by electricity and the consumption of current is about the same as for one electric light bulb. The results have been most gratifying. Nine machines have been installed during 1915, at a cost of \$75 each, chargeable against the Maintenance Fund.

MEDICAL DEPARTMENT.

The general health of the mammals has remained good throughout the year, the deaths occurring principally among the small mammals and South American monkeys.

Except where an immediate autopsy was necessary to determine the cause of death in order to safeguard our collections, all animals have been turned over to the Prosecutor's Department. It has been necessary to destroy an increasing number of animals from our original stock on account of old age. During the coming year it will be necessary to destroy a number of animals whose usefulness as exhibition specimens is past, owing to general debility resulting from old age. Many of these animals were of adult age when received at the Park, and have been on exhibition continuously for more than a dozen years. With some of these animals, especially where the specimen is rare, and difficult or impossible to replace, it is often difficult to decide just when it has reached such a state of debility as to justify its merciful destruction.

The new Animal Hospital which has been greatly needed for many years is now nearly completed, and should be ready for service about March, 1916. This building will provide excellent facilities for the isolation and treatment of medical and surgical cases, and at the same time by the prompt removal of suspicious cases of illness, reduce the danger to the healthy animals from infectious diseases.

FORESTRY DEPARTMENT.

The usual amount of general maintenance work, such as cleaning of walks, lawns and buildings, the collection and disposal of garbage, refuse, manure and ashes, the general upkeep

of buildings, cages and fences, and the policing of the grounds, has been carried on as in previous years. Special attention has been paid to the lands lying east of Boston Road, which have been cleaned and are now in good condition. Great assistance was rendered in this work by the free labor furnished by the Association for Improving the Condition of the Poor.

Little has been done by this department during the year in ground improvement work on account of lack of funds. The most important items, however, are, the replacing of the Poultry Laying House at the Nursery; the erection of a Brooder and Incubator House; the installation of seven new drinking fountains; the strengthening of the Elephant Yard fence; the construction of a drain from the new Animal Hospital to the main sewer; and the commencement of the work in connection with the construction of a new concrete bottom for the Wild Fowl Pond.

A large amount of repair work to buildings and walks has been accomplished during the year. This has already been reported upon, however, in the Improvement and Repair Fund.

EAST SIDE EXTENSION.

During the early part of the year it became apparent to your committee that the Public Service Commission intended to take a large strip of the easterly border of Bronx Park, which contains perhaps the finest trees in any public park in the City of New York, including a large number of handsome pin oaks, and use it in connection with the new subway for the storage of dead cars. In return they proposed to give a triangular portion of land north of 180th Street and abutting on the southeast corner of the Zoological Park. The lands were about equal in area, but for park purposes there could be no comparison, as the land they proposed to add to the Park is rough and unsightly, with only a few trees in one corner, and an enormous sum would be required to fit it for park purposes.

With the above purpose in mind the Public Service Commission introduced at Albany a bill to which your committee made strenuous objections. The bill would have failed of passage if the objections had not been withdrawn upon the definite statement to your committee, of Chairman McCall of the Public Service Commission, through Mr. John E. Eustis, that no portion of the land acquired from Bronx Park would be used for storage yard purposes, and that a request would only be made

for a strip of Park land sufficiently wide to allow the passage of traffic tracks, such strip being twenty-three feet wide at the widest part and tapering to a point at either end.

Commissioner Whittle of the Department of Parks for the Borough of the Bronx took a firm stand against the invasion of the Park by the subway system, here an elevated structure.

After much negotiation a line was agreed upon between the Park Department and the Public Service Commission, largely through the activities of Park Commissioner Ward, by which the easterly line of the addition to Bronx Park was slightly modified and a very small strip without important trees, turned over for the use of the new subway, a strip of land of similar area belonging to the Public Service Commission immediately to the south, being returned to the Park.

The subway construction company has been forced to build a concrete wall and to keep the nearest line of rails eight feet back from the top of such wall. The installation of storage yards for dead cars, even though they be on land outside of the Park, is nevertheless a public nuisance when located at the entrance to one of the handsomest parks in the City of New York and close to the entrance of the new Bronx Parkway.

The Public Service Commission and their engineers, in their planning and construction of the subway, have shown an utter indifference to the most elemental artistic considerations, and have exhibited an entire disregard of the Park interests. If it had not been for the active protest of the Zoological Society and the support received from the Park Department, many handsome trees would have been destroyed and much of the easterly side of Bronx Park turned into an unsightly elevated yard for the storage of dead cars. The Public Service Commission pursued their old policy of secrecy until the last moment and until the road was so far constructed that it was impossible to secure any substantial change in the route.

Bronx Park seems to be doomed to attacks of this character, but the Society has thus far succeeded in stopping them.

A portion of the old Boston Post Road which passes through the Park and still retains its original beauty, is threatened at present with an overhead system of electric wiring, but as this portion of the Park is within the jurisdiction of the Society, your committee expect to be able to prevent its desecration by ugly overhead wires, to say nothing of the injury to the splendid forest trees that surround it.

With the use of about fifteen men supplied by the Association for Improving the Condition of the Poor, through the courtesy of Mr. Percy R. Pyne, a vast amount of cleaning up was done east of Bronx River without cost to the Society. All paper, bottles, broken glass, wire and tin cans have been collected and burned or buried, dead brush burned and dead trees cut into cordwood and stacked.

RECEPTIONS.

National Academy of Sciences.—On November 17, 1915, the members of the National Academy of Sciences visited the Park upon the invitation of your committee, and were entertained at luncheon. About sixty were present.

Reception at Aquarium.—The Annual Reception to members was held at the Aquarium on Monday evening, May 3, 1915. An attendance of about five hundred was noted. Members of the Board of Managers and of the Ladies' Auxiliary acted as a Reception Committee. Motion pictures were shown and music and refreshments were furnished.

Ladies' Day at the Park.—The Ladies' Auxiliary held a reception at the Park on Thursday, May 13, 1915. Refreshments were served.

Members' Day at the Park.—On Thursday, June 3, 1915, a reception was tendered to members in the Administration Building. Band music and refreshments were furnished.

MEMORANDUM OF MEETINGS, 1916.

Annual Meeting of Society:
January 11, 1916, 8:30 P. M.
Hotel Waldorf-Astoria.

Meetings, Board of Managers:

Annual Meeting.	Park Meeting.
January 18, 1916, 3 P. M.	June 1, 1916, 2:30 P. M.
Down Town Association. Preceded by Luncheon at 1:30 P. M.	

Annual Dinner.
February 10, 1916, 8:00 P. M.
Courtesy of F. A. Schermerhorn, Esq.

Meetings, Executive Committee:

January 13	May 11
February 10	June 8
March 9	October 12
April 13	November 9
December 14	

Members' Reception at Aquarium.
May 1, 1916, 8:30 P. M.

Ladies' Day at Zoological Park.
May 11, 1916, 3 P. M.

Members' Day at Zoological Park.
June 1, 1916, 3 P. M.

BOARD OF MANAGERS.

Elections.—At the Annual Meeting of the Society in January, 1915, the following Managers were elected:

Class of 1918.

Levi P. Morton,	Frank K. Sturgis,
Andrew Carnegie,	George J. Gould,
Madison Grant,	Ogden Mills,
William White Niles,	Lewis Rutherford Morris,
Samuel Thorne,	Archer M. Huntington,
Henry A. C. Taylor,	Henry M. Tilford.

Annual Dinner.—The Sixth Annual Dinner of the Board of Managers was held through the courtesy of Mr. Ogden Mills, at his residence, 2 East 69th Street, on Tuesday, February 9, 1915. A short address was made by Mr. Madison Grant, and Mr. Raymond L. Ditmars, Curator of Reptiles at the Zoological Park, exhibited four reels of pictures of the life history of small and interesting animals at the Park.

Spring Meeting.—The Spring Meeting of the Board of Managers was held in the Administration Building of the Zoological Park on Thursday, June 3, 1915, at 3:30 o'clock P. M. A luncheon in the Rocking Stone Restaurant at the Park was served at 2 o'clock.

PHEASANT MONOGRAPH.

The manuscript and illustrations are practically complete for the entire series of four volumes of the Pheasant Monograph, and the printing of the first volume by Witherby & Company of London, England, has been authorized and is now under way. The delay in the publication of this great work has been due entirely to industrial disturbances abroad caused by the war.

BRONX PARKWAY COMMISSION.

The Bronx Parkway Commission has proceeded actively with the work of acquiring the land necessary by private purchase, and at the end of the year had obtained more than one-half. Condemnation proceedings to acquire the balance will be instituted by the Commission during 1916.

The entire possession of the lands from the Botanical Gardens to Kensico Dam will be secured by the Commission during the year, and work will be begun on the final construction of the Parkway.

GAME PROTECTION.

Dr. Hornaday was granted a leave of absence for two months from August 25, to tour the West in a campaign to encourage the policy of establishing game refuges in our National Parks. The expenses of this tour were borne by the accumulated income in Dr. Hornaday's Permanent Wild Life Protection Fund, and the results are set forth in two Wild Life Protection Bulletins, No. 1 and No. 2.

Your committee are at present actively engaged in the support of the Chamberlain-Hayden Bill now before the Congress of the United States, looking to the establishment of perpetual sanctuaries for animals and birds in areas in the National Forests to be selected by the Secretary of Agriculture from lands unsuitable for agriculture or grazing. The policy of establishing game sanctuaries in National Forests has been approved by your committee as well as the members of the Society at the Annual Meetings, held in January, 1915 and 1916. If the bill mentioned above is adopted it will prove a most wonderful step forward in the federal protection and increase of wild life.

TROPICAL RESEARCH STATION.

The most important action taken by your committee during the year has been the establishment of a Tropical Research Station at Georgetown, British Guiana, for the prosecution of scientific work in the general problems of evolution and in the life histories of birds and mammals, and also to provide a tropical base for collecting and shipping to the Park and the Aquarium a constant supply of mammals, reptiles, amphibians and fishes. This matter was first brought to the attention of the Executive Committee by Mr. C. William Beebe, Curator of Birds at the Zoological Park. After a careful investigation by a sub-committee appointed for that purpose, the station was authorized. It is estimated that \$5,000 will be necessary for its establishment and maintenance during the year 1916. The funds for this purpose were received from the following members of the Board of Managers, who have each contributed \$1,000:

Cleveland H. Dodge,
Mortimer L. Schiff

C. Ledyard Blair,
James J. Hill,

George J. Gould.

This station is to be known as the Tropical Research Station of the New York Zoological Society, and is to be in charge of Mr. Beebe, who will be known as Directing Curator, subject to the orders of your committee. The following officers have also been appointed: Messrs. G. Innes Hartley, Research Associate; Paul Howes, Research Assistant and Donald Carter, Collector. Messrs. Hartley and Howes, both trained scientists and collectors, are giving their services free. Arrangements also have been made with the Trinidad Shipping Company for the free transportation of collections, and with the government of British Guiana for the free use of buildings and facilities in the Botanical Gardens at Georgetown.

This is a great step forward in the scientific branch of the Society's work. It is interesting to note that nothing of the kind has been previously attempted by a zoological society.

The funds at present available are only sufficient for 1916, and the continued existence of this station will depend upon the results achieved during that year.

GALLERY OF OIL PAINTINGS.

Provision for the next five years for the Gallery of Oil Paintings of American Wild Game has been made. The amount

of \$5,000 a year for five years will probably cover the cost of the full-sized portraits of all the important large game animals of North America, together with such of the smaller birds and animals as are threatened with immediate extermination.

The committee in charge consists of Messrs. Frank K. Sturgis, Chairman; Lewis Rutherford Morris, Watson B. Dickerman and William T. Hornaday.

The Gallery has received from Mrs. Frederick Ferris Thompson a gift of great interest and value, viz, the Lioness Portrait by Rosa Bonheur. It has been hung over the fireplace in the Ladies' Reception Room of the Administration Building.

A full-sized picture of the Alaska Moose, at a cost of \$1,500; a portrait of Dinah, the gorilla, at a cost of \$300, and the "Grant Caribou," at a cost of \$1,250, all by Mr. Carl Rungius, have been completed during 1915, and are now on exhibition in the Administration Building. The next picture by Mr. Rungius will be the "White Fronted Musk-Ox," also at a cost of \$1,250.

Subscriptions of \$250 for 1915 to the fund for the Gallery of Oil Paintings have been received from the following:

Frank K. Sturgis, Lisperard Stewart, Percy R. Pyne, Mortimer L. Schiff, Joseph A. McAleenan, James J. Hill, Frederick G. Bourne, F. Augustus Schermerhorn, George F. Baker, Edward S. Harkness, C. Ledyard Blair, Grant B. Schley, Ogden Mills, Andrew Carnegie, Cleveland H. Dodge, Watson B. Dickerman, Henry M. Tilford, George J. Gould, Samuel Thorne, Charles F. Dieterich.

Nine of the above subscribers have signified their willingness to renew their subscriptions for subsequent years, and your committee feel that under normal conditions they confidently can rely upon the balance.

CAMPAIGN AGAINST THE ABUSE OF PARKS.

On May 1, 1915, Mayor Mitchel, Police Commissioner Woods and the Park Commissioners began a general and very determined campaign against all persons who persist in abusing public parks by throwing rubbish in them. This is the first general effort of the kind that has ever been made in the city, and became necessary because to the lawless and disorderly portion of park visitors, appeals and admonitions had ceased to have any effect. It was decided by the Mayor and formally set forth in a proc-

lamation, that hereafter arrest and punishment in court would be the penalty to offenders. To this end the City Magistrates were called upon to co-operate by inflicting maximum fines.

After fair warning in the newspapers, and on hundreds of new notices posted in the parks (nearly all supplied by the Zoological Park), the campaign began.

Police Commissioner Woods reported that on Sunday, the 9th of May, 1915 persons were admonished for rubbish throwing, 312 were served with summonses to appear in court, and 169 were arrested. Of these, 380 offenders were convicted and fined, only 28 were discharged and 73 cases were pending when the report was compiled.

On the next Sunday, May 16, 430 offenders were admonished, 40 summonses were served, 3 arrests were made, 34 convictions were secured, 5 were discharged and 4 cases were pending. Courts were held on both the Sundays mentioned, and on May 11, Chief Magistrate McAdoo sat in the court of the 8th District at West Farms. The Director of the Zoological Park sat three times with Judges McAdoo, Cornell and House during the disposal of about 110 cases.

The effect of this crusade in the Zoological Park has been strikingly apparent, and as a result on Monday mornings the cleanliness of the walks, even after Sunday crowds of from 35,000 to 40,000 persons, is remarkable.

UNITED STATES ATLANTIC FLEET.

During the visit of the United States Atlantic Fleet to the City of New York your committee extended to the officers the freedom of the Park and of the Aquarium, and the privileges of the Administration Building in the Park. Instructions were also given to admit free all sailors in uniform. Many availed themselves of this privilege.

AUDITING.

Upon the authorization of your committee, the auditors, Messrs. Marwick, Mitchell, Peat & Company, made another examination of the system of receiving supplies at the Park during the year 1915, and reported thereon with certain recommendations which have been adopted.

They are at present making the usual audit of the finances of the Society for the year, which is being greatly facilitated by the new system of checking the accounts quarterly. Their report as well as that of the Auditing Committee will immediately follow the report of the Treasurer.

RETIREMENT OF MARTIN SCHENCK.

With the abolishment of the position of Chief Engineer of the Park Department in the Borough of the Bronx, the Society loses a friend who has been most helpful in promoting the interests of the Zoological Park. Mr. Martin Schenck has acted in this capacity during the entire period of the construction and existence of the Park, and your committee have always found in him an efficient, faithful and devoted public official, and greatly appreciate his long services to the Society and to the public.

ACKNOWLEDGMENTS.

The relations with all departments and officials of the City's government, and especially with the Park Department, have continued to be most cordial, and your committee are greatly indebted to these officials, as well as the members of the Board of Estimate and Apportionment, for their support and co-operation during the past year.

The Directors of the Park and the Aquarium, and their respective staffs, have been most zealous and energetic in the performance of their duties, and the Society enters upon this new year with the assurance of an ever-increasing sphere of activity and usefulness.

Respectfully submitted,

MADISON GRANT, *Chairman.*

PERCY R. PYNE,	FRANK K. STURGIS,
WILLIAM WHITE NILES,	LISPENARD STEWART,
WM. PIERSON HAMILTON,	WATSON B. DICKERMAN,
HENRY FAIRFIELD OSBORN,	

Ex-Officio.

Extract from the Minutes
of the
Executive Committee of the Board of Managers
of the New York Zoological Society

October 14, 1915

on the occasion of the

Death of Samuel Thorne

Resolved. That the Executive Committee place on the record their deep sense of loss in the death of Mr. Samuel Thorne, on July 4, 1915.

Mr. Thorne was one of the very earliest Patrons of the Society, having qualified in July, 1897, and subsequently became, through his munificent subscriptions, a Founder and a Benefactor. He was also one of the early members of the Executive Committee, and a most faithful and helpful attendant at the many meetings when the planning and constructive work of the Zoological Park were under way. At the time of his death he was Vice-President of the Society.

Mr. Thorne's singularly agreeable personality endeared him to his associates, and his tact and consideration towards others added to his natural force of character in the impress he made on the achievements of the Society.

To the Society his loss will be great, and to his friends on the Committee there remains the last sad duty of placing this record of his services on the minutes.



DROMEDARY AND DWARF DONKEY

REPORT OF THE
DIRECTOR OF THE ZOOLOGICAL PARK
TO THE BOARD OF MANAGERS

TO the Zoological Park and its visitors the most important event of the year was the successful crusade against the throwing of waste paper and rubbish upon the walks and lawns.

For six exasperating years the officers of the Zoological Park had been carrying on an unequal warfare against park vandals, with brief periods of success and long periods of failure. The trouble lay in the fact that during all that period our campaigns were not backed up by the Mayor, the police department or the courts, and with but rare exceptions similar fights for public decency were not made in other parks. The lessons inculcated in the Zoological Park were steadily lost through the vicious immunity that the lawless element enjoyed elsewhere.

The laws covering the situation were ample. The root of all the trouble lay in the two facts that the lawless ten per cent. is impervious to all education and appeals to decency, and the average judge on the bench then felt that the throwing of a piece of waste paper was too trivial a matter to engage the attention of a court. Often it happened that policemen who arrested rubbish-throwers heard the verdict "discharged," and a judicial reprimand addressed to themselves. Naturally, such treatment had the effect of paralyzing the efforts of park policemen.

For at least four years it had been perfectly evident that the Zoological Park alone and unaided could not hold its own against the park vandals, and maintain a state of satisfactory cleanliness. Mayor Gaynor was appealed to with an urgent request to start the movement which alone would afford a remedy; but those appeals achieved no results.

The incoming of Mayor Mitchel was regarded as an opportunity to carry into effect a sweeping reform. When the situation had been fully put before him he decided to take the initiative, and set in motion the machinery that would yield clean parks for Greater New York. It was decided that the reform movement should be started on May 1, 1915.

The Mayor decided to issue a letter that was equivalent to a proclamation, and also an order. Both were duly set forth in the press, and the latter was posted thoroughly throughout all the city parks.

The Mayor called upon the Police Commissioner, the Park Commissioners and the City Magistrates to enter the campaign, and devote to it their best efforts. Accordingly, each one of those departments took up the matter very seriously. Chief Magistrate William McAdoo issued to all city magistrates a letter that was literally a call to arms for the stern suppression of vandalism in parks. The Zoological Society printed on linen and distributed several hundred park posters of three kinds, giving the "Law Against Disorder in Parks," the "Order of the Mayor," and "Peanuts Forbidden in Parks."

One of the finest things done by Police Commissioner Wood was to detail detectives in plain clothes to mingle with the crowds in the parks, and arrest rubbish-throwers. The effect of this was paralyzing to the vandals who had been accustomed to watch for the uniformed policemen and evade them.

Up to April 30 the vandals were in the saddle. The sneaks who sit on comfortable benches and slyly throw rubbish under or behind them, were enjoying life to the utmost. The thousands of sneaks who slyly strew peanut shells on the walks and grass borders were buying peanuts with great diligence, and the nine peanut stands near the three busy entrances of the Zoological Park were doing a thriving trade. Every Monday morning the peanut shells and waste paper in the Zoological Park was a sickening sight, and there were other parks which we will not name which were quite as badly disfigured.

On May 1 the warfare began, in all the parks. The orders were to enforce the law, and show the grown men and large boys no mercy. Women who proved incorrigible in rubbish-throwing were also to be arrested.

Chief Magistrate McAdoo opened the ball by holding Sunday sessions of the courts that try park ordinance violations in the Borough of the Bronx, and he sat on the bench in the West Farms Court on Sunday, May 9. Monday, May 10, was a day that will be long remembered by the park vandals of the Bronx. The Court of Magistrate House (6th District) was crowded to the doors with offenders and their accusers. On that day 126

cases were disposed of, and exemplary punishment was the well-nigh universal rule. Only two or three offenders were let off unfinned.

Park policemen who for years had been flouted by the vandals were in their glory. It appeared that one of the worst plague spots in the Bronx for vandalism was St. Mary's Park, where until that time the police had been powerless to get results for law and order. One officer who had often been bluffed by impudent women as well as men served eight summonses in one day, and had the satisfaction of seeing eight fines imposed. A great change has come over St. Mary's Park since May 1, 1915.

Every City Magistrate, so far as known, took an active part in the crusade. The stern admonitions delivered from the bench by Magistrates McAdoo, Crane and Cornell, were good to hear.

The effect of this reform movement as shown in the Zoological Park was satisfactory beyond words. By June 1 our Park was on each week day as free from rubbish as the best-kept "pay" Zoological Gardens of Europe—which is saying much! Even on a Monday morning, instead of wagonloads of waste paper and miles of peanut shells, one could walk from the Fordham entrance to the West Farms entrance without finding enough waste paper to fill a small waste basket. The disappearance of the curse of peanut shells was the most delightful feature of all, because they had been much harder to cope with than the waste paper. The completeness of their elimination is almost unbelievable until seen.

To-day the cleanliness of our walks and walk borders is a constant joy. One can walk through our grounds without feelings of rage and mortification. We owe all this new condition to Mayor Mitchel, Police Commissioner Wood, and the City Magistrates, particularly Judges McAdoo, Crane, House and Cornell.

Hereafter, the policy that produced this reform should most sternly and diligently be continued. The only way to keep the lawless element down is to deal with it diligently, persistently and severely. Remonstrances addressed to swine with human bodies are of no avail. We have tried every form of remonstrance and appeal, and the lawless ten per cent. laugh us to scorn. They must be made to feel the stern grip of the law, and upon them leniency is wasted.

ATTENDANCE.

The monthly record of attendance for 1913, 1914 and 1915 is as follows:

	1915	1914	1913
January	80,606	56,268	88,195
February	123,466	57,235	75,895
March	105,286	77,257	127,448
April	142,497	182,131	128,828
May	245,483	394,154	262,474
June	206,945	220,406	297,719
July	233,790	277,901	233,961
August	171,218	249,072	242,672
September	159,617	204,206	171,371
October	167,210	150,872	136,800
November	98,366	107,922	104,950
December	45,493	43,009	73,370
Total	1,780,077	2,020,433	1,943,683

DEPARTMENT OF MAMMALS.

W. T. Hornaday, Curator; Raymond L. Ditmars, Assistant Curator.

The year 1915 may well be marked as the beginning of important losses, in the mammal collection through old age. It was also marked by three tragic occurrences which involved in each case the loss of a Park celebrity.

Our unrivalled Barbary lion, Sultan, eighteen years of age, acquired on October 17, 1902, and thirteen years in the Zoological Park, finally became so aged and infirm that life was no longer agreeable to him. In order to save him from lingering long and painfully, he was chloroformed.

Our Alaskan brown bear, Billy, born and brought to the Park in 1899, met with a serious accident. Through a bad fall his pelvis was so badly shattered, at the hip joint, that he instantly became painfully crippled, and there was no possibility of effecting a cure or even giving him relief through an operation. When it became apparent that nothing could be done for him, and that life was a painful burden, the animal was painlessly shot.

The Indian elephant developed quite early in the year his annual fit of "musth," and while we had hoped that it might be less severe than usual, it proved to be more so. His bad temper was so pronounced and dangerous, and his rage at his keepers so constant, it became evident that at last old Gunda was suffering from the confinement that was necessary to keep him even measurably under control. Accordingly the Director advised the Executive Committee of these facts, and recommended that the life of the animal be terminated without delay. The Committee accepted the recommendation, and ordered that it be carried into effect.

Mr. C. E. Akeley, the successful and famous hunter and collector of elephants in Africa, was asked to kill Gunda, by shooting, and accepted that painful task. On June 21, a single bullet from a .26 caliber elephant rifle traversed the brain of the great animal, produced instantaneous paralysis of the brain and the whole nervous system, and was as painless as chloroform at its best. The skin and skeleton were presented to the American Museum of Natural History, and were prepared for mounting.

The female gorilla, Dinah, died on July 31 of loss of appetite and malnutrition, after having been over eleven months on exhibition in the Zoological Park, and about two years after she was acquired by the Society's agent in Africa, Mr. Garner. She was entirely free from tuberculosis, and although her internal organs seemed to be sound and healthy, her appetite utterly failed to sustain her.

Among other mammal losses during the year were a hartebeest, a musk-ox, the pygmy African elephant, and two aged bison. Aside from the losses due directly to accidents, infirmities of temper and old age, the death toll during the year was by no means great. Fortunately there were no epidemics. The pygmy elephant, Congo, had become hopelessly afflicted with neuritis, and after having lived in the Park since July, 1905, he was destroyed on November 3, 1915.

The foreign wild animal market has been seriously injured by the war, but thanks to our connection with G. Tyrwhitt-Drake, Esq., the owner of a large and excellent private menagerie at Maidstone, England, we have received during 1915 some excellent accessions. Our single-humped camel, from Mr. Drake's collection, is a particularly fine and handsome animal,



APPARATUS FOR THE STUDY OF METABOLISM. UNDER THE DIRECTION OF DR. FRANCIS G. BENEDICT
Lowering the giant tortoise into the air-chamber of apparatus installed by the Carnegie Institution of Washington in the Zoological Park, New York.

and the young lioness, a gift of the Junior Auxiliary of the Zoological Society, and also from Mr. Drake, is strikingly handsome and desirable.

In a short time steps must be taken to establish between New York and South Africa a direct and continuous line of imports. It is now imperatively necessary for all managers of zoological parks and gardens to take the steps that are necessary to insure the future adequate supplies of old world animals coming through channels entirely new.

The more noteworthy purchases of mammals during the year 1915 were a chimpanzee, orang-utan, gray gibbon, yellow baboon, saki monkey, 2 howling monkeys, 9 beavers, great anteater, 2 Hoffman sloths, 4 American wapiti, 1 Dybowski deer, 1 mouse deer, 2 lynx, 2 marten and 2 fisher. From G. Tyrwhitt-Drake, of Cobtree Manor, Maidstone, England, were purchased a lioness, Scotch wildcat, black-backed jackal, dromedary, guanaco, reed-buck and a vulpine phalanger. The animals received from Mr. Drake were the only mammals that came from Europe during the past year.

Among the more important gifts were a series of monkeys and small carnivorous mammals, from the Collins-Day South American Expedition, 1 female Virginia deer, 1 Mexican deer and 2 ocelots.

From the Society's expedition to Pará, in charge of Curator Beebe, the following mammals were obtained: 2 black spider monkeys, 1 white-faced sapajou, 4 hooded sapajous, 4 weeper sapajous, 2 black tamarins, 2 squirrel monkeys, 1 Humboldt's woolly monkey, 2 red coati-mundis, 2 crab eating raccoons, 2 Brazilian wild dogs, 2 banded ocelots, 1 grison, 1 tayra, 3 kinkajous, 2 armadillos, 3 banded opossums, 1 sharp-nosed opossum, 3 red agoutis, 1 paca, 4 Brazilian squirrels and 1 Brannick's giant rat. The last-named animal is particularly rare and interesting.

BIRTHS DURING 1915.

The births during 1915 represent the usual number of valuable animals. The list of the most important species is as follows:

8 Virginia Deer	3 Hog Deer
9 American Wapiti	1 Yak
5 Axis Deer	1 Persian Ibex
3 Fallow Deer	4 Himalayan Tahr

1 Sika Deer	1 Donkey
1 Malay Sambar Deer	9 Raccoon Dogs
1 Barasingha Deer	4 Raccoons
1 Altai Wapiti	4 Beavers
1 American Bison	2 Grizzly Bears
3 Aoudad	2 Kadiak Bears

1 Black Lemur

The following animals were sold during 1915: 4 wolves, 2 Sika deer, 1 Sambar deer, 7 red deer, 3 American wapiti, 1 fallow deer, 1 hog deer and 2 axis deer.

The following mammals were destroyed, chiefly on account of old age, during 1915: 2 male bison, 4 elk, 1 sitatunga, 1 Altai wapiti and 1 white-bearded gnu.

With the opening of the public school term in the fall of 1915 the usual representative series of living mammals, birds and reptiles was furnished by the Zoological Society to the zoological study room of the Washington Irving High School. The series of animals there exhibited during the school year is always cared for at the Park during the summer season.

The complete census of the mammals at the close of 1915 is as follows:

(Osborn's Classification)

	<i>Species</i>	<i>Specimens</i>
Marsupialia	5	10
Edentata	2	4
Carnivora	48	117
Pinnipedia	2	5
Rodentia	42	134
Primates	29	79
Artiodactyla (Even-toed Ungulates)	67	260
Perissodactyla (Odd-toed Ungulates)	13	23
Proboscidea	2	3
Hyracoidea	1	1
Total	211	636

REPORT OF THE VETERINARIAN.

By W. Reid Blair, D. V. S.

There has been no epidemic of any character among the mammal collection during the past year; however, a much larger number of animals have been received in a moribund condition, and this has resulted in increasing an otherwise low death-rate for the year.

Among the important losses were the gorilla, the Indian elephant Gunda, the African elephant Congo, and a male orang. The gorilla Dinah died in July, after having been on exhibition about a year, from malnutrition and exhaustion. Perhaps no animal created so much interest among medical men as Dinah, who had been examined by scores of physicians. At no time during her illness did she exhibit signs of any acute affection. During the year she was subjected to the tuberculin test on three occasions, and in each instance the test was negative. The only definite symptoms exhibited were those of cage paralysis, and she showed great improvement for several months as the result of the administration of extracts of thyroid and thymus glands; tonics of arsenic, strychnin and iron, and being kept out-of-doors for a number of hours each day. The autopsy revealed no evidences of acute disease, except emaciation of the muscular tissue and changes in the bony structure similar to those seen in the early stages of *osteomalacia* or "*cage paralysis*."

The pygmy elephant Congo was destroyed in October, since it was apparent that he could never again be exhibited on account of the deformities of the joints which had produced a permanent lameness. Congo had for years suffered from chronic rheumatism, affecting the tendons and joints, but at various times seemed to be free from this trouble. In the past two years, during the summer months, he had been taken out of the Elephant House and placed in the southerly portion of the elk range where there is a small pond. The soft ground and mud, and out-door life greatly improved his condition, but soon after removal to his winter quarters, early in September, he showed evidences of severe inflammatory affection of the joints, with so much pain that it was decided that he should be humanely destroyed.

The orang died as a result of a heart thrombus, after exhibiting symptoms of heart affection for three weeks. The autopsy showed an unusually large thrombus.

Toxic Gastro-Enteritis.—A form of infectious toxic gastro-enteritis, occurring principally among the carnivores, particularly the bears, and the smaller carnivores in the small mammal collection, has been very troublesome for several years, and especially so during the past year. The disease is infectious, but not highly contagious. In some respects it resembles distemper, but differs essentially from this disease in that it is not *readily* conveyed by direct contact. The mortality is very high, over 90 per cent. The disease is transmitted by direct contact, or by the intermediation of excrement vomit, infected bedding and various diseased food products. Since this disease may be confounded with ptomaine or meat poisoning, uraemic poisoning, distemper, or the presence of foreign bodies in the stomach, I deem it wise to describe the affection somewhat in detail.

The disease generally appears in an acute form, the majority of cases running their course within from one to four days. The affected animal is suddenly seized with an unaccountable vomiting, or has passed blood by bowel, although two or three hours before this, the animal was apparently normal and had partaken of food as usual. Many cases have occurred, among ocelots and South American cats, where the animal appeared perfectly well at night, but upon the keeper's arrival in the morning it was found vomiting or passing bloody stools, and in a dazed state, unwilling to move, and persistently assuming, in an unconscious manner, the recumbent position. The ears, mouth and limbs are very cold, and a dirty saliva issues from the mouth.

In some cases violent and repeated vomiting appears early. This vomiting is generally the first symptom to attract the attention of the keeper that something is wrong with the animal. Thirst is intense, but as soon as water is taken it is almost immediately rejected. The vomit at first contains particles of food, or it may consist of the whole of the meal taken a short time before. This is followed by the rejection of a glairy, mucoid material containing air-bubbles and water. A short time afterwards the vomited material becomes of a greenish tint, due to the presence of bile; and, finally is followed by a fluid more or less thick consistency, of a bloody chocolate or coffee colored appearance, and having a characteristic and very nauseous odor. In many cases these symptoms are accompanied by a profuse diarrhea, which may be bloody in appearance, and very often

of a putrid odor. The temperature is normal or subnormal, rarely elevated, except in the very early stages of the affection. The respiration is not much disturbed, except immediately before and after the act of vomiting, when it is generally rapid. The abdomen is hard and drawn or tucked up, and on pressure over the region of the stomach, pain is generally evinced by groaning and great resistance on the part of the animal, which often vomits immediately after this manipulation. When the animal is made to move, it does so with great reluctance, shows great muscular weakness, arches the back and has a tottering, feeble gait, and again quickly assumes the recumbent position.

When the disease is fairly developed, the facial expression is anxious or haggard, the eyeballs are drawn back into their orbits, the pupils are dilated and the eyes expressionless. The urine is scant, of a high specific gravity, dark in color, and emits a very strong odor. Although nervous disturbance is not a pronounced characteristic of this disease, convulsions, resembling distemper convulsions, and coma have been seen in fatal cases.

While the mortality is very high we have, however, had recovery take place in a polar bear, sloth bear, sun bear, ocelots, a clouded leopard and in a puma. While there is absolute loss of appetite, we have taken advantage of the insatiable thirst, and in this way have been able to administer antiseptic remedies such as copper arsenate, quinine salicylate, hydrochloric acid, salol, subgallate of bismuth, and morphine sulphate in cod-liver oil, and in milk and brandy. In the cases of the polar bear, and sloth bear, the early administration of cod-liver oil doubtless saved the lives of both of these animals, which were taken ill on the same day. The polar bear took thirty-four ounces of cod-liver oil at one dose. Animals will often retain carbonated water and milk when other liquids will be expelled. In these cases it is important to cut off the supply of water from the animal in order that medicines may be administered. The indications for treatment are to give the stomach as much rest as possible, and the food must consist of white of eggs, milk and fresh beef juice given in small quantities at intervals of three or four hours. After two or three days of this diet, scraped raw beef may be added to the milk and the white of eggs, but only in very small quantities, say a tablespoonful at a time. As the body temperature is greatly re-

duced care should be taken to supply some artificial heat, and this can be done when the animal is small by placing the cage over or against a heater.

The unfavorable signs of this disease are continual vomiting, especially if the vomited material has a coffee-like or prune juice appearance, or a putrid odor, and when the animal reaches a comatose stage. If symptoms of pneumonia become manifest, a fatal termination is to be expected.

The favorable signs to be looked for are, the cessation of vomiting, the animal beginning to notice its surroundings, the desire for food and the inclination to move about its cage.

The post-mortem appearances of infectious toxic gastro-enteritis are fairly constant, and it is often only by such examination that a differential diagnosis is made.

In many instances when death takes place early the lesions indicate an acute hemorrhagic septicemia. The stomach and small intestine often contain a more or less thick, dark red or purple fluid, containing blood, mucus and bile, and resembling in appearance tar or prune juice. On washing or scraping the stomach, the purple color does not disappear. The mucous surface of the stomach is thrown up in rugae or folds, which appear thick and swollen, often showing abrasions. In some instances the gastric mucosa is soft, black in color, and appears as a vast sheet of clotted blood. The lesions in the small intestines are generally confined to the duodenum, the walls of which are of an intense purplish color.

With the exception of the lungs, spleen and kidneys, which are generally more or less congested, the abdominal organs rarely show any gross changes.

Among the animals destroyed on account of general debility as a result of old age were—three buffaloes, four elk, lion Sultan, bearded gnu, and several antelopes.

During the coming year, it is hoped that we shall be able to replace some of our African antelopes, many of which will die or will have to be destroyed on account of debility associated with old age.

When an animal is a rare specimen it is often difficult to decide just when it has reached such a state of debility as to justify its removal from exhibition, or merciful destruction.

The new Animal Hospital which has been under construction during the summer should be completed and ready for use during the early part of February. This hospital will afford the best facilities for the observation and care of injured or sick animals, and, at the same time, by the prompt removal of all suspicious cases of illness from exhibition, will protect the healthy specimens from the danger of contracting infectious diseases.

The isolation of the hospital will permit of the successful treatment of distemper among the carnivores, and of other contagious diseases without fear of an epidemic occurring among our collection.

Of the deaths occurring among the mammals, they were divided as follows:

Primates	75
Carnivores	44
Ungulates	37
Proboscidiens	2
Rodents	45
Marsupials	10
Edentates	9
Total	222

DEPARTMENT OF BIRDS.

C. William Beebe, Curator; Lee S. Crandall, Assistant Curator;
Samuel Stacey, Head Keeper.

In spite of the continued demoralized condition of the European animal market, the bird collections have been able to hold their own during the past year. The first few months of the war so completely checked the sources of supply on which we were dependent that the effect on the collection was at once noticeable. Since then, however, we have developed other means of obtaining specimens, particularly from South America, and we expect to be able to maintain our present position until normal conditions again prevail.

Early in the summer, the Curator, accompanied by Mr. G. Inness Hartley and Keeper Herbert Atkin, visited the Zoological Gardens of Pará, Brazil, and there secured a large collection of Brazilian mammals, birds and reptiles. Sixty-two birds of forty-three species, of which fifteen were new to us, were included.



YOUNG EMU

The young emu was hatched in 1915 and successfully reared by its male parent.

The most important specimens were: A harpy eagle (*Thrasaëtus harpyia*), hyacinthine macaw (*Anodorhynchus hyacinthinus*), three species of trumpeters (*Psophia*), several species of guans (*Penelope*) and three forms of great caciques (*Ostinops* and *Gymnostinops*), besides a considerable number of parrots, parakeets and other birds.

Mr. Charles C. Worthington, of Shawnee-on-Delaware, Pa., having decided to dispose of his large collection of native and foreign birds, kindly presented them to the Zoological Society. Packing and transportation were supervised by the Assistant Curator, and the collection was brought to the Park by motor truck, without loss. Through this gift we secured 147 well-acclimatized birds representing fifty-nine species.

Late in the autumn of 1915, a few birds of paradise, chiefly from the island of Waigiu, northwest of New Guinea, were received in London. After a great deal of delay and difficulty, two pairs of these birds finally reached the Zoological Park. They are the red bird of paradise (*Uranornis rubra*) and the Wilson bird of paradise (*Schlegelia wilsoni*). The former is a large, showy bird, the adult male being ornamented with long, red plumes. This specimen should acquire these decorations after next summer's molt. The Wilson is a very small species, not much larger than a thrush, but exceedingly brilliant in plumage. It never had been represented in European collections until the present shipment was received. As we were fortunate enough to secure two greater birds of paradise (*Paradisea apoda*), which were brought over from London by Mr. G. Tyrwhitt-Drake, we now are able to exhibit three species of these gorgeous birds.

A handsome pair of the arctic horned owl (*Bubo virginianus subarcticus*), a nearly white form, was secured from a collector in Manitoba. The pale plumage of this bird forms a striking contrast to the tawny hue of southern birds in adjoining cages.

During the summer, unusual efforts were made to breed various birds, and very satisfactory results were obtained. The most interesting youngster is an emu (*Dromiceius novae-hollandiae*), the first to be reared in this country. A black-footed penguin (*Spheniscus demersus*), was brought to full size, but it died quite suddenly when apparently in the best of health. Eight mourning doves (*Zenaidura macroura carolinensis*), four Australian crested doves (*Lophophaps lophotes*), a pectoral rail

(*Hypotaenidia philippinensis*), two white ibises (*Guara alba*), a white-eyed duck (*Marila nyroca*), besides a goodly number of wood, mandarin and mallard ducks and Canada geese, are among the most important. Of Gallinaceous birds, we reared the Bob-white (*Colinus virginianus*), the California quail (*Lophortyx californicus*), the Curacao crested quail (*Eupsychortyx cristatus*), as well as golden, silver and Swinhoe pheasants. A number of Passerine birds also reached maturity, as reported in the *Bulletin*.

For several years the birds in the Flying Cage have made more or less sporadic attempts at nesting, but in the spring of 1915, their efforts crystallized in a colony which closely simulated a natural rookery. A small elm tree in one corner of the cage was chosen as a site, and was literally bowed down by the great weight of the nests. At one time, two pairs of snowy egrets (*Egretta candidissima*), three pairs of roseate spoonbills (*Ajaja ajaja*), two pairs of white ibises (*Guara alba*), and a pair each of scarlet (*G. rubra*) and black-headed ibises (*Ibis melanocephala*), were building or engaged in incubation. Unfortunately, a very severe wind and rain storm wrecked many of the nests and so disturbed the others that the rookery was destroyed. However, two white ibises were fully reared, and we have every reason to hope for better success during the coming season.

As a complement to the active campaign work in behalf of the birds, which is being carried on by the Zoological Society, a permanent exhibit of "Appliances for Attracting Birds" was arranged in the Park, during the spring of 1915. A well-forested spot bordering the eastern side of Baird Court was selected as being the most advantageously placed, and a great variety of bird houses and boxes were set up there. Nesting logs and boxes of many patterns, food counters and shelters of several kinds and various other paraphernalia for aiding the increase of our native birds, were placed in suitable positions. Visitors to the Park have evinced a great deal of interest in the exhibit, and many persons have thus been induced to purchase and make use of such appliances as appealed to them.

Perhaps the most important contribution to ornithology made by the Department of Birds was the discovery by the Curator of an atavistic wing on the hind leg of pigeons and other birds. This was elaborated as "A Tetrapteryx Stage in the Ancestry of Birds," *Zoologica*, Vol. II, No. 2.

Two other papers for *Zoologica*, relating to ecological field work near Pará, were written, and will be published early in 1916.

Papers published during the year, relating to work in the Department of Birds were as follows:

"Spiders Collected by C. William Beebe in Burma and Borneo," including Ten New Species (Petrunkovitch, Ann. Entom. Soc. Am. VII, p. 169).

"Two New Genera of Myrmicine Ants from Brazil," *Blepharidatta brasiliensis* and *Glamyromyrmex beebei*. (Wheeler, Bull. Mus. Comp. Zool. Harv., LIX, p. 483.)

"Relationship of the Tupaiidae and the Eocene Lemurs, Especially *Notharctus*." (Gregory, Bull. Geol. Soc. Amer. Vol. 24, pp. 247-252.)

By far the most vital undertaking inaugurated by this Department is the planning of a Tropical Zoological Station in Georgetown, British Guiana. This is described elsewhere. In brief, its purpose will be research in the life histories of various groups of vertebrates and invertebrates, with special reference to the more general problems of evolution. Curator Beebe will be in charge, with Mr. Inness Hartley as Research Associate and Mr. Paul Howes as Research Assistant. The second object of the work will be the collecting and shipping to the Zoological Park of interesting rare types of living vertebrates. Mr. Donald Carter will be attached to the Station as collector. The party will reach British Guiana about February 1, and will remain in the field at least one year.

CENSUS OF BIRDS LIVING IN THE ZOOLOGICAL PARK.

January 1, 1916.

<i>Orders</i>		<i>Species.</i>	<i>Specimens</i>
Rheiformes,	Rheas	1	2
Struthioniformes,	Ostriches	2	3
Casuariiformes,	Cassowaries and Emus ...	3	9
Tinamiformes,	Tinamous	5	8
Galliformes,	Quail and Pheasants	70	168
Pteroclidiformes,	Sand Grouse	1	1
Columbiformes,	Pigeons and Doves	46	132
Ralliformes,	Coots and Gallinules	12	19



THE SNAKE-KILLING MUSSURANA



ONE OF SOUTH AMERICA'S DEADLIEST REPTILES, THE JARARACA

This poisonous snake is one of the lance-heads (*Lachesis*) and locally known as the Jararacacú. The Mussurana is immune to the bites of these vipers, and kills and swallows them.

Sphenisciformes,	Penguins	1	4
Lariformes,	Gulls and Terns	13	43
Charadriiformes,	Plovers and Sandpipers	10	19
Gruiformes,	Cranes, Seriomas, etc.	13	28
Ardeiformes,	Ibises, Storks and Herons	38	88
Palamedeiformes,	Screamers	3	3
Phoenicopteriformes,	Flamingoes	3	7
Anseriformes,	Swans, Geese and Ducks	71	687
Pelecaniformes,	Cormorants and Pelicans	9	23
Cathartidiformes,	New World Vultures	7	18
Accipitriformes,	Hawks and Eagles; Old World Vultures	28	42
Strigiformes,	Owls	17	30
Psittaciformes,	Parrots, Macaws and Cockatoos	65	151
Coraciiformes,	Kingfishers, Hornbills, etc.	6	7
Cuculiformes,	Touracos and Cuckoos	5	5
Scansoriformes,	Barbets and Toucans	7	10
Piciformes,	Woodpeckers	5	13
Passeriformes,	Thrushes, Sparrows and all other Perching Birds	372	1253
		<hr/>	<hr/>
		813	2773

Summary: Orders, 26; Species, 813; Specimens, 2,773.

DEPARTMENT OF REPTILES.

Raymond L. Ditmars, Curator; Chas. E. Snyder, Head Keeper.

It was only by persistent attention to sources in the United States and tropical America that the reptile collection for the past year was maintained at the uniformly high standard that was set at the opening of the Park sixteen years ago. It means much to explain that not one reptile or amphibian of European, Asiatic, Malayan, African or Australian origin was added to the collection during the past year. The war has rendered it absolutely impossible to obtain Old World specimens.

However, the census of the collection of reptiles and amphibians for the past year compares very favorably with the census of the close of 1914. One reason for this has been the success of the Reptile House staff in maintaining the collection.

There were no deaths to speak of among the rare and costly specimens, many of which are establishing interesting records of longevity. The curator of the department is now at work upon a table of these records, and similar records for the mammals. In the past five years we have saved much money and permanently strengthened the collection, by eliminating from our purchases the greater number of representatives of species that have been found to be delicate and short-lived in captivity.

Early in 1915 special efforts were made, in counteracting the lack of Old World species, to obtain a very full series of reptiles and amphibians from the southern states and the Southwest. A collector on the Pacific coast did particularly good work in supplying us with lizards, snakes and different species of toads. Two collectors in Texas sent on much interesting material, and a large number of very satisfactory reptiles came from Florida. The Curator and Keeper Palmer collected several hundred specimens of the local reptiles in Sullivan County, New York and Pike County, Penn.; those specimens representing about twelve species.

Our South American accessions came from several sources. Mr. R. R. Mole, of Port-of-Spain, Trinidad, who has steadily supplied us with tropical American reptiles since the opening of the Park, made special efforts to obtain a large series of specimens. From him we obtained a number of species of particularly interesting frogs, toads and tree-toads that we have never previously exhibited, and apparently have never anywhere been exhibited alive before this. An expedition of the Society to Pará resulted in the addition of several interesting reptiles, and near the close of the year, we received a particularly important collection of South American poisonous snakes through the courtesy of Dr. Vital Brazil, Director of the Institute of Serum-Therapy, at Sao Paulo, Brazil.

The scientific work accomplished by the reptile department during 1915, comprises a quite elaborate review of little-known frogs and toads of the Old and New World by Richard Deckert of the Reptile House staff. Mr. Deckert made careful studies of a number of rare species on exhibition and for the first time prepared colored illustrations of these species from life. He combined his observation of habits with detailed descriptions of species, in an article of over thirty pages, illustrated with color plates, that appeared in a recent number of *Zoologica*, (Vol. II, No. 1). Numerous *Bulletin* articles and notes concerning

the reptiles were prepared during the year, and the card index system was increased in value by the addition of data relating to longevity, growth and increase of weight.

The Curator has continued his motion picture studies of reptiles at night, photographing many interesting traits by mercury-vapor light. Among the results were moving picture films of several species of tree toads when singing and enormously distending the throat, the complete and previously unknown life history of the marbled salamander, the emergence of five different species of snakes from the eggs, and greatly magnified scenes of the feeding habits of small reptiles and amphibians. Motion picture studies of insects and their near allies resulted in scenes of the stridulating species while "singing," and magnified views of development and transformations.

On October 26, 1915, Dr. Francis G. Benedict, Director of the Nutrition Laboratory of Carnegie Institution of Washington, began a series of very elaborate experiments at the Park, for the study of the metabolism of mammals and reptiles. Dr. Benedict's laboratory apparatus was first set up in the tortoise room of the Reptile House, and his researches will continue far into the year 1916.

Dr. Benedict thus describes, in precise terms, the character of these experiments:

"In connection with the researches on human nutrition carried out at the Nutrition Laboratory of the Carnegie Institution of Washington the necessity for a study of the fundamental laws governing heat production in the living organism became apparent. Of the numerous factors influencing vital activity, particularly as indicated by the oxidation of material in the body and the accompanying production of heat, factors such as body temperature and the relative proportion between the active mass of protoplasmic tissue and inert body fat are of greatest significance.

"Subsidiary questions, such as the nature of the integument, the insulating character and density of fur and feathers are, as yet, practically unknown. While the greatest proportion of the researches in the Nutrition Laboratory are confined to observations on human subjects, the rich supply of material in the whole range of zoology in the New York Zoological Park led to the inception of a research designed to study the gaseous metabolism of animals of widely varying species. An elaborate and deli-

cately tested respiration apparatus with numerous chambers for varying sizes of reptiles has been installed in the Reptile House of the Park, and daily observations under the technical direction of Mr. Colbert Mason of the Nutrition Laboratory have been in progress since October 28, 1915. Thus far the python, boa and rattlesnake have been especially studied, and a most interesting series of observations on the giant tortoise from the Galapagos Islands completed.

"It is believed that the material is being collected upon such a scale that, when it is deemed practicable to publish the results, definite conclusions can be drawn. Reports of the work will be published from time to time, as the collection of data justifies, in the publications of the Carnegie Institution of Washington."

CENSUS OF REPTILES AND AMPHIBIANS OF THE ZOOLOGICAL PARK.

January 1, 1916.

	<i>Species</i>	<i>Specimens</i>
Chelonia	36	138
Crocodylia	6	54
Lacertilia	11	91
Ophidia	57	235
Amphibia	47	273
Total	157	791

SUMMARY OF COLLECTIONS.

A census of the animals in the Zoological Park, taken January 1, 1916, is as follows:

	<i>Species</i>	<i>Specimens</i>
Mammals	211	636
Birds	813	2,773
Reptiles	110	518
Amphibians	47	273
Total	1,181	4,200

GROUND IMPROVEMENT AND MAINTENANCE WORK OF THE DEPARTMENT OF FORESTRY AND CONSTRUCTION.

Hermann W. Merkel, Chief Constructor and Forester;
E. H. Costain, Assistant Forester.

The first work to be started by the ground improvement fund was the replacing of the poultry house at the Nursery, and the erection of a brooder and incubator house, both of which

were needed very much. The house is a structure twelve by eighty feet, containing approximately double this amount of floor space. The building was planned by Mr. E. A. Costain, in charge of the Nursery, and consists of a frame structure on a concrete foundation, sufficiently high to permit a scratching place for the full length and width of the building, situated under the main floor. This space is connected with the main floor by a simple runway in the form of a trap-door, which when pulled up tightly closes the opening to prevent draft.

The whole building is so planned that there is no room for rodents and other vermin, and the roosts, nesting boxes, and front drop curtains, are all in keeping with the most up-to-date practice. The building is occupied by 300 hens, and has so far been very successful. The brooder and incubator structure is a one-story frame building with a good concrete incubator cellar, and was placed sufficiently remote from the other buildings to remove any danger to them in case of fire. The brooders, accommodating about 800 chicks, are heated by means of a small hot-water heater and coils. The total cost of both structures was \$1,400.

Drinking Fountains.—Of these much needed conveniences we placed during the year seven new ones, in the following locations: one north of the Aquatic Bird House, one interior of the Lion House, one north of the Elephant House, one on Baird Court north of the Primate House, one interior of the Antelope House, one south of the Raccoon Cage, and one north of the Boat House. After looking over all available fountains at a reasonable price, we decided upon a white enamelled single jet fountain with a foot pedal arrangement which starts and stops the flow of water. They are solidly placed upon concrete foundations with a drainage basin, and were connected with the sewer or walk basin as occasion required. The two placed in the Antelope House and Lion House are of special value during the winter when the out-door fountains cannot be used. The total cost of the fountains and setting amounted to \$600.

Elephant Fence.—When it became apparent last year that it would be necessary to strengthen and brace the elephant fences, a simple but efficient reinforcing of 5-inch steel rails and 3-inch by 3-inch tee iron was designed, and the work carried out early in the season. There were used on this work 400 feet of 60-pound steel railroad iron, 1,500 cubic feet of concrete, 572 feet of 3-inch by 3-inch by $\frac{1}{2}$ -inch tee iron, 160 feet 3-inch by



ELK TWINS, BORN IN THE ZOOLOGICAL PARK

But one other instance of the birth of elk twins in the United States is known to us.

$\frac{1}{2}$ -inch flat iron, 100 feet 3-inch by $\frac{5}{8}$ -inch flat iron, all being fastened together with $\frac{5}{8}$ -inch machine bolts. Several trials by the elephants have conclusively proven that the fence is now sufficiently strong to withstand any attacks. The cost of this improvement was \$1,100.

Wild Fowl Pond.—The recurring epidemics among the birds of the Wild Fowl Pond have indicated for some time the necessity of supplying a sanitary bottom, but the appropriation of \$3,000 for this purpose hung fire so long a time that it was not possible to do more than the excavating of about 200 cubic yards of soft mud, and the partial underpaving of about 60 per cent of the area that is to be concreted. About 1,000 cubic yards of fill and stone were used. As soon as the weather will permit the work will be completed, and the muddy portion of the pond will have a smooth, clean bottom of concrete.

New Animal Hospital.—The drain from the hospital was connected with the main sewer by means of about 150 feet of 6-inch vitrified pipe.

IMPROVEMENT AND REPAIR FUND, 1915.

Walk Repairs.—The walk repairs was again the largest item performed from this fund, there being resurfaced over 95,000 square feet of walks and roads, the main walks being: Pheasant Aviary Walk, Mountain Sheep Walk, Beaver Valley Walk, Service Road for its entire length with the exception of a stretch of about 300 feet, Crotona Entrance Plaza and walk, and the Boston Road Entrance Plaza. At the Concourse about 2,000 square feet of concrete sidewalk was laid, and a great deal of the brick taken up and relaid upon a concrete foundation. The total expenditure for walk repairs was \$4,025.

Heating Repairs.—The heating repairs consisted of the installation of a new hot-water supply boiler and additional radiation at the Administration Building, the installation of a steam heating plant at the dwelling at Nursery, and the resetting of two boilers at the Large Bird House, and one at the Rocking Stone Restaurant. In addition to that a great many minor repairs to pipes, valves, etc., were done, and a number of new flues supplied. The expenditure for this work was \$1,100.

Flying Cage.—Repairs to and recovering of the Flying Cage which had been begun last fall, were carried on during the winter and early spring whenever weather conditions permitted.

The sectional scaffold designed for this purpose by Mr. deWell-worth worked very well, the entire repairing, recovering and repainting being carried on economically and without the slightest mishap. This work was finished on April 13, 1915, several weeks earlier than we anticipated. The total cost of this work was \$1,300.

Repairs on Pheasants' Aviary.—At the Pheasant Aviary, seventeen cages were taken down and entirely replaced. The only portion of the cagework found in good condition was the wire netting. The sheet iron partitions were so badly corroded that it was not possible to leave any of them, while the framework needed a great deal of replacing or scaling, and for that reason the repairs exceeded the estimated cost, but as the framework was erected after a new design which will enable us to protect all surfaces with paint, these cages should from now on need very much less repairing than formerly.

Large Bird House and Aquatic Bird House.—At the Large Bird House all of the outdoor cages of the east side received a very thorough overhauling and repairing at a cost of \$316.15, and the water supply to the in- and out-door cages here and in the Aquatic Bird House received new pipes, valves, labor, etc., to the extent of \$469.

Goose Aviary.—The entire southern half of the Goose Aviary received a complete overhauling. One thousand five hundred and fifty feet of new fences, on concrete coping requiring 1,500 cubic feet of concrete, was installed.

The erection of the Hospital rendered necessary the building of a retaining wall mounted with a concrete coping at a cost of \$400.

On the various Deer Barns, portions of the shingled roofs and the gutters and leaders were repaired or replaced. The cost of this item was \$515.

At the Rocking Stone Restaurant, a large portion of the shingled roof was replaced, though this work was done partly by Maintenance Fund, only \$55.00 being charged to the Repair Fund.

All of the older Entrance buildings came in for a certain amount of reshingling, at a cost of \$360.

Other work done under this fund was the drainage of the dwelling at the Nursery, a certain amount of repairs to the cages of the Small Mammal House, and to the fences of the Deer Ranges and Mountain Sheep Hill.

GENERAL MAINTENANCE WORK.

Of general maintenance, the raising and distribution of food supplies, the cleaning of walks, lawns and buildings, the collection and disposal of garbage, refuse, manure and ashes, and the general upkeep of buildings, cages and fences, and the policing of the grounds, were carried on much as heretofore, though fortunately we had the efficient help of a number of men supplied absolutely free of charge by the Association for Improving the Condition of the Poor.

For a number of weeks these men were kept busy on the lands east of Boston Road. During the present year we have had from the Association for Improving the Condition of the Poor, free labor to the extent of \$3,798.25, which has helped us most wonderfully in getting the area mentioned in proper condition, and in keeping it clean. These men also dug the excavation for the refrigerating room at the Boat House. They laid the water-pipe to the new drinking fountain north of the Boat House and erected the fountain; set posts for all of the refuse boxes; built a large stretch of guard rail and a retaining wall; did a great deal of grading, and of cutting out of dead, dangerous and undesirable trees. They did all of the mowing and raking of grass east of the Boston Road, and have dug out innumerable plants of poison ivy. In short, they have done a great amount of good and valuable work, and it would be a pity if it were necessary to go without their help next year. It is to be hoped that some arrangement can be made with this Association which would be mutually profitable. The supervision of these men was intrusted to our Special Patrolman, H. Van Benschoten, who made an efficient foreman, but who, at the same time, did not allow this work to interfere with his police duties, making during the year 44 arrests, obtaining a conviction in each case, and co-operating in many instances with the city police, from whom we obtained a great deal of help.

DEPARTMENT OF ADMINISTRATION.

H. R. Mitchell, Chief Clerk and Manager of Privileges; Wm. Mitchell, Cashier.

The Maintenance Fund allowed by the City for the year 1915 was the same as given us in 1914, and fortunately was again granted in a lump sum, permitting its expenditure to the best advantage. The special work to which Mr. Beebe, our Curator of Birds, had been detailed for several years having been



MUTE SWANS FROM BELMAR, NEW JERSEY

completed, it was necessary to return him to the regular maintenance force, which reduced the amount available for supplies of all kinds, by the amount of his salary. It was a very difficult problem to provide for our needs throughout the year without a deficit, but by strict economy we were able to accomplish it.

The responsibilities of the Chief Clerk were greatly increased during several weeks' absence of the Director in the west on a lecture tour in the interests of game protection.

Audit and Accounts.—In addition to the audit of the Society's books for the year, certified statements of which appear elsewhere in this report, the privilege accounts were given the usual check by the auditors, and another investigation was made covering the receipt of supplies for both the maintenance and privilege departments. In this connection, several changes were suggested to and approved by the Auditing Committee, which have been put into effect. An inventory of equipment in all sections of the privileges is now being made, which will be revised and corrected annually hereafter, the work being done at intervals throughout the year when other duties of the Stock Accountant will permit.

New funds created in 1915 were confined to the single account to be known as the Tropical Research Fund. Some changes in the methods of approval and payment of bills were made just before the close of the year in order to provide for the change in the Treasurer's office by which Mr. R. L. Cerero was made Bursar, and the Farmers' Loan and Trust Company, Assistant Treasurer, taking effect immediately after the first of the year.

Privileges.—As a whole, the showing made during the year just closed has been the most unsatisfactory in some years. This was due to a number of causes. Practically all expenditures made in the Park are in the nature of luxuries, and therefore they are the first to be curtailed under conditions such as prevailed during the greater part of 1915. While the actual decrease in attendance over the previous year was only 13 per cent, unfortunately the reduced attendance when analyzed by months and Sundays shows an actual gain over the preceding year in the first three and last months of the year, increasing the ratio of decrease in the five months, May to September, inclusive, which make up the season in which the bulk of the privilege business is done, to nearly 24 per cent.

There was an unusual amount of bad weather during those five months, affecting so many Sundays that when a comparison of Sunday attendance during that period is made with 1914, the percentage reduction is further increased to more than 35 per cent. Sunday attendance in May alone was 142,463 below the previous May. On the other hand, it is impossible to reduce help or salary expenses correspondingly, because a certain minimum force must be maintained continuously throughout the season. After making every possible reduction in the operating force consistent with maintaining our standard service, we were able to make a cut in this item of only 11 per cent.

Rocking Stone Restaurant.—The gross business was not up to the normal figures by any means, but considering the attendance, the showing made was satisfactory. We were so unfortunate as to lose by death on the last day of the year one of the oldest employees at the restaurant, Mr. Leo Fradkin, who had been head waiter for ten years. Mr. Fradkin was a most faithful and efficient employee, who had the full respect of every member of the Park force. As privileges employees were excluded from the benefits of the pension plan, when that plan was adopted, it was impossible to provide for Mr. Fradkin in any way from pension funds, during his long illness.

Boating.—The condition of the dock, and the necessity for its being replaced by a concrete dock, has been previously referred to in these reports. Funds for this improvement were not provided by the City, and by the opening of the boating season the dock was in such a dilapidated condition that the boating receipts were seriously affected, showing a relatively greater loss than any other division of the privileges. At the close of the season another effort was made to get the funds for rebuilding, but entirely without success. As it was now impossible to go on another season without danger of serious accidents, arrangements were made to tear away the old dock, fill in the space where it stood, and put on the concrete floor in the spring, completing it before the boating season opens. The work is progressing favorably, and it is hoped that nothing will occur to prevent its being finished early in the spring of 1916.

The usual amount of expense was put into the painting and repairing of the boat equipment, the work being carried on by privilege employees before and after the boating season.

Boat House Restaurant.—One very important improvement was made in connection with the Boat House Restaurant in the past year; the construction of an addition to the basement adjoining the kitchen, providing space for the large storage ice box which has previously had to be maintained in the kitchen. This improvement was not authorized in time so that it could be completed until very near the end of the year, and it was not, therefore, of any material benefit for this season. Another year we feel sure the result will fully justify the expense incurred in making the improvement.

Soda Water.—Quite extensive changes and alterations were necessary at all our soda stands to meet new requirements of the Sanitary Bureau. Most important among these was the providing of hot water for washing glasses—no easy task, since gas had to be piped some distance for the purpose.

All stands have now been supplied with tanks and gas heaters except the one near the Bear Dens, and that one will have to be equipped in the same way during the next season. Securing gas for that location will present numerous difficulties, on account of the trees and rock that will be encountered.

This division of the privileges suffered a very heavy loss in gross receipts from the condition referred to previously.

New Soda Pavilion.—The small rustic soda stand in front of the Reptile House which was erected as a temporary improvement fourteen years ago, was so badly out of repair that it was necessary to do some work in the shape of renewal of the floor and plumbing in order to carry it along until city funds can be secured to erect a suitable structure on this site that will provide properly for refreshment demands, and be more in keeping with the surrounding buildings. The new shelter should be so arranged that at least a portion of it can be closed, to protect the fountain and other equipment. The fountain in the present structure has been greatly damaged by being exposed to all kinds of weather.

Guide Book.—The Mountain Sheep Edition of the Guide Book, of which 40,000 copies were printed and placed on sale in 1913, was exhausted in September, 1915. The copy was so thoroughly revised at the time of this issue that it was unnecessary to make any revision for a new edition beyond a few minor changes.

It was decided to print 20,000 copies, to be known as The Gorilla Edition. This brings the total number of copies of the Guide Book printed to date well above 200,000.

Souvenir Books, Postal Cards, Pictures and Other Miscellaneous Publications.—Considering general conditions, the falling off in attendance and in sales generally, the results we were able to show in these items were up to our expectations. A very attractive souvenir, in the form of a folding art letter was issued in two forms, four-color and photogravure. These letters carry about sixteen reproductions from selected animal photographs, with writing space arranged so they fold in the form of a letter, and can be sealed. They are a little difficult to display properly at the gates, and the sales have been somewhat disappointing.

A new feature added to our list of souvenir publications was a series of animals in art stamps, printed in colors by the four-color plate process. While the pictures are of miniature size, $1\frac{3}{4}$ x $2\frac{3}{4}$ inches, careful attention was given to all the color details, with the result that they are surprisingly effective.

The series comprises 130 stamps, grouped in six sets of twenty subjects each, with an album containing the remaining ten stamps and providing space for pasting the entire series. A briefly written caption giving correct information is printed under the position for each stamp. The collection has proved very popular with Park visitors as a souvenir, and somewhat to our surprise has had quite an extensive sale throughout the country. We had expected to place these stamps on sale early in the season, but much time was required to get the color proofs finished to our satisfaction, and deliveries could not be made until the middle of August. Sales, however, were very satisfactory, and before the close of the year more than half of the issue had been disposed of.

Gate Receipts.—The collections at the entrances on pay days were somewhat less than last year, and were again credited to the improvement and repair fund and expended in making urgent repairs that could not be done from maintenance.

Riding Animals.—The female elephant Alice was used as a riding animal this season. To make it possible to have her keeper look after this service without being away from the building, the riding trip was confined to two of the yards at the Elephant House. This plan worked successfully, and as a result quite a sum was added to the income.

DEPARTMENT OF ENGINEERING.

George M. Beerbower. Civil Engineer.

Owing to the many unique features of the Animal Hospital, the attention of our engineer has been mostly confined to the superintendence of this building. Soundings were made for a sewer-line for this building over every available route, in order to avoid rock excavation as much as possible.

The work of the contractors, H. H. Vought & Co., has been most satisfactory. Not only have the specifications been faithfully complied with, but many conditions not anticipated by the specifications, were taken care of in a satisfactory manner. The building is now nearing completion and will be occupied early in 1916.

During the early part of the year the engineer's time was occupied in finishing the large colored map of the easterly half of the Park. This map is designed for exhibition purposes, and to accompany a similar map of the western portion of the Park, which has been found most valuable. Surveys were made and plotted, showing every individual tree, its size and kind, of all the area demanded by the Public Service Commission for Rapid Transit Storage Yards along the easterly side of the Park.

Plans were prepared and filed for a large brooder-house and other buildings required in the nursery. Surveys were made, ground staked out, and grades established for the paving of the Wild Fowl Pond.

The latter part of the year has been mostly taken up in superintending the work of the removal of the old wooden dock at the Boat House and the construction of a new concrete dock. The old wooden dock consisted of 63,660 square feet of three-inch planking and timbers rigidly spiked together. This was badly decayed and water-soaked, and upon it had been built a booth and stairways which had to be supported while the wood-work was being removed from under. Early in December the river rose to such a height as to overflow the site, and work on the new dock had to be suspended.

In an institution of the magnitude and character of this, innumerable and varied demands are made upon the engineer which can not be embodied in the space available for an annual report.



GOLDFISH AT THE NEW YORK AQUARIUM
From a recent photograph

DEPARTMENT OF PUBLICATION AND PHOTOGRAPHY.

Elwin R. Sanborn, Editor and Photographer.

Photography.—The more important of the subjects photographed in 1915 were as follows: Sea-lions diving into their pool, kiang, dromedary, gudha, banded opossum, dinomys, Humboldt saki, yak, hartebeest, swimming frogs, rare tropical frogs and toads, tree snakes, palm viper, black-footed penguin, trumpeters, emu chick, crested eagle, goliath herons and merganser. An extensive series of negatives was made of the bears, of construction work at the Wild Fowl Pond, and the bird shelters and bird-feeding appliances exhibited on Baird Court.

A paper on the eyes of fishes was illustrated by a number of photographs made under the direction of Dr. Bates.

The most successful and interesting results of the year's photographic labors were the negatives of fishes made in the tanks at the New York Aquarium; successful from the point of view of the solving of a very difficult problem. It practically is impossible to remove any mammal, bird or reptile from its home quarters and photograph it successfully; and this holds true of fishes. In fact, there are few creatures that are as sensitive to changes as the fishes. Usually it is fatal to the specimens when they are disturbed, and the resulting photographs under these circumstances are of little value. The pictures that the display tanks around the Aquarium presented, however, were so alluring that experiments with them, covering the past ten years, were tried from time to time until the problem of photographing the specimens as they cruised about in the tanks was successfully solved. The work involved not only innumerable devices in synchronizing the camera shutter and the artificial lights employed, but also many nights of experiments that extended far into the hours of the coming day. Often a week of these experiments produced not a single result other than a blank plate.

It sometimes requires several nights' work to make one good negative, on account of the tardiness of the fishes in rising in the water and presenting a picturesque grouping. Often, also, a flood of light suddenly enveloping a tank sends its occupants scurrying to the bottoms and along the sides where frequently they remain for a long period.

Many of the negatives made in the past year of the specimens in the wall tanks of the Aquarium are quite unique, and their production is distinctly a step forward in this particular branch of photography.

Bulletin.—The *Bulletin* appeared bi-monthly, as usual, and despite the fact that the source of supply for this publication is practically limited to the Park and Aquarium, all of its contributors have responded cheerfully to its demands.

Annual Report.—Although the Annual Report was issued in good season, it was delayed by the changes in the financial statements.

Zoologica.—Four numbers of *Zoologica* were issued; and two others, now in type, will be published within a short time. One issue, "The Whale Shark," was published for the Aquarium.

Cataloging.—A card index of photographs published has been started and already 2,400 cards have been placed in the files. This gives a complete record of the publication place of every photograph sent out for such purposes. It has been brought down to date, as have all records of cuts and plates belonging to the Society. All records of this department are in perfect order, and any cut, die, plate or negative is instantly available. This department's filing system is simple and most effective, and is carried out in the most painstaking way.

Record Albums.—The Aquarium negatives were transferred from the Aquarium Building and placed in the vaults at the Park. They were sorted, filed, numbered and printed. Over 900 negatives were handled and the prints mounted in ten specially-made loose-leaf albums. These were turned over to the Aquarium.

Appended is a list of photographic work accomplished in 1915:

Lantern slides and transparencies, sold	105
Enlargements, sold	79
Prints for Albums (Aquarium)	960
Prints for Albums (Park)	399
Prints for Publication	449
Prints sold, and used for miscellaneous purposes.....	1,683
Total	3,675

CONCLUSION.

In conclusion, I deem it my duty to point out to the people of New York, and to the members of the Zoological Society, the fact that our Fordham Entrance, at the corner of Pelham Parkway and the Southern Boulevard, is a disgrace to the Zoological Park. It is cheap, it is temporary, it is ugly, and now that the Boulevard has been raised as it has, it is *impossible!* It would be a waste of money to put a concrete approach in front of it, and that would be less than one-quarter of a real remedy.

We need for that spot a new entrance, in keeping with the remainder of the Park. It should be dignified, imposing, ornamented with sculptured bears, and in main structure and approaches it should be architecturally and artistically perfect. The amount of money absolutely required is \$35,000; and that sum must be found, forthwith. The situation at that entrance is intolerable.

The lobby room of the Reptile House must be rebuilt, at once, to afford about ten times more sunlight than that particular interior now receives. This, also, must be worked out in the near future. The change will cost about \$2,500; and it can not be made a day too soon.

Respectfully submitted,

WILLIAM T. HORNADAY,

Director.

REPORT OF THE
PENSION BOARD
OF THE
NEW YORK ZOOLOGICAL SOCIETY

The first year of the active operation of the Pension Fund has proven the beneficent influence of that Fund upon its beneficiaries. There have been no withdrawals except in the case of members leaving the services of the Zoological Society. Of such resignations there have been five, but in each case the person taking the position vacated has become a member of the Fund, so that the total of the membership is only one less than that of the previous year. At present the total number of beneficiaries is 166, and there are two applications pending.

The first pension granted under the regulations of the Fund was to Mr. John J. DeNyse, for many years a member of the Aquarium staff, and although Mr. DeNyse had not quite served the requisite number of years, the Pension Board, in accordance with the rules governing the Fund, voted unanimously in favor of a pension of 30 per cent of his former salary. Unfortunately, Mr. DeNyse was able to benefit by the action of the Board for only one month, as his death occurred shortly before the close of the year.

There was collected during the year from the employees of the Zoological Society the sum of \$3,172.18, and from the Zoological Society as a contribution from the Carnegie Pension Fund \$4,585.00, and from the Income Account of the Zoological Society \$3,433.37. This, with interest amounting to \$63.78, makes a total of receipts for the year of \$11,254.33, available for pensions. The major portion of this has been invested by the Finance Committee in good bonds, as the Treasurer's report will show.

As it is necessary for all new employees to be examined by a physician in order to determine their fitness to become members of the Fund, Dr. Gilbert Vander Smissen was appointed to make such examinations.

In view of the fact that the drafts upon the fund for pensions are certain to be quite heavy, it is highly desirable that further subscriptions to the Pension Fund be obtained. Of course, only the income of this fund can be expended for pensions, and there is grave danger that even in the near future the present income will not be sufficient to meet the demands that will be made upon it.

Respectfully submitted,

H. W. MERKEL,

Secretary, Pension Board.

Approved:

GEORGE C. CLARK,

Chairman, Pension Board, N. Y. Z. S.

REPORT OF THE
DIRECTOR OF THE AQUARIUM
TO THE BOARD OF MANAGERS.

THE New York Aquarium continues to fulfil its mission as one of the museums of the city with the same success as in past years.

The attendance has diminished to some extent as a result of the war in Europe, but with more than four thousand visitors a day for the year 1915, the loss is not visually perceptible.

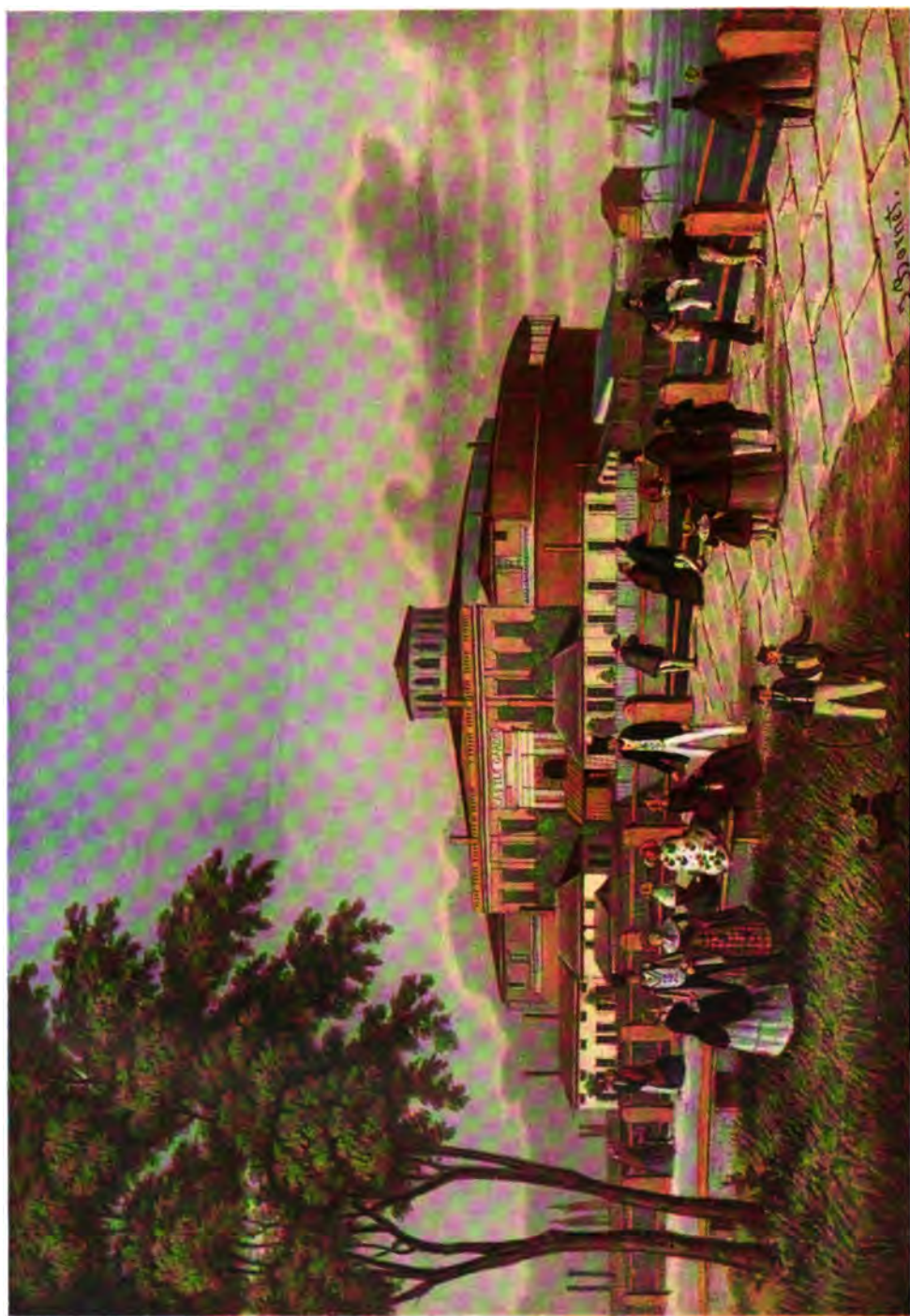
Its relations with the public and with the officials of the city government remain on the same cordial basis as formerly. It has long been the custom of many teachers in the city schools to visit the Aquarium annually with their classes and this practice has not declined. A work of considerable educational value is the free distribution of zoological material for school use to teachers who request it, and the service entails but trifling expense.

The Aquarium is regarded by the country at large as a responsible and useful institution if one may judge by the large correspondence addressed to it on subjects pertaining to its peculiar field.

The aquatic exhibits are as large and attractive as usual, while the building and its equipment have been improved during the year in many respects without increased cost.

IMPROVEMENTS FROM THE MAINTENANCE FUND.

The most important improvement of the year was the installation of filters for cleaning water pumped from the Harbor into the large floor pools. These pools are located too low to permit of their being connected with the reservoir of pure sea water. They are moreover used for heavy feeding animals such as porpoises, seals and crocodilians which has made it impossible to connect them with the reservoir for fear of fouling that important water supply.



THE NEW YORK AQUARIUM BUILDING IN 1850; THEN KNOWN AS CASTLE GARDEN.
 Reproduced by courtesy of the Downtown Association from a color print in their collection.

The condition of the water pumped from the Harbor has grown appreciably worse since the Zoological Society took charge of the Aquarium in 1902. It became unusually foul during the past summer and the last porpoise, which lived 21 months in the building, died from sheer filth infection. It being impossible under present conditions, to supply these large pools in any other way than from the Harbor, the filtration of the water became absolutely necessary. This matter has been considered nearly every year but abandoned owing to the difficulty of finding a place in this over-crowded building to install filters of sufficient size. It was necessary to take two of the large tanks, above the pump room, used to furnish a strong head to these pools but as the pumps are always in operation it was decided to convert them into filters and get along with the supply furnished by the pumps alone.

The new filters were put in operation on October 3 and the effect of their use has been satisfactory beyond our expectations. The harbor water is now delivered to the floor pools in quite as clear condition as the stored sea water used in the glass-fronted tanks.

A surprising amount of dirt is floated from the tops of the filters when they are washed twice a week. Although the dirt has certainly been taken out of this water supply, its salinity is, of course, as low as ever. It is also probable that the water still contains bacteria but this danger may perhaps be eliminated by the use of limited quantities of copper sulphate. In any event the water is entirely clear and is undoubtedly more wholesome for the occupants of the pools.

The general appearance of the interior of the Aquarium building has been much improved by painting, a single coat of paint having served to freshen the surfaces of ceiling, walls and pillars. This work also included offices and the service gallery as well as the main exhibition room. White paint in the service gallery and on the facings of the skylights has had the effect of considerably improving the lighting of the exhibition tanks.

A new dark room in the laboratory and two new toilet rooms recently completed, were improvements much needed. Several square yards of cracked floor tiling have been replaced to good effect. The ventilating ducts under the balconies have been extended to the full length of the balconies and the troughs of the fish hatchery have been renewed.



OVAL SHIPPING TANKS OF GALVANIZED METAL

No. 1 (above), 6 ft. x 3 ft. x 2 ft.; No. 2, 3 ft. 6 in. x 2 ft. x 2 ft.; No. 3, 2 ft. x 1 ft. 2 in. x 1 ft. 1 in.
No. 4, 3 ft. x 1 ft. 6 in. x 1 ft. 6 in.

Photograph by L. L. Mowbray.



WOODEN SHIPPING TANK FOR FISHES

Inside dimensions 4 ft. x 2 ft. 2 in. x 2 ft. 5 in. Capacity 156 gallons.

Photograph by L. L. Mowbray.

Extensions of piping from the air compressor have been installed in both salt-water filters as an aid in the weekly cleaning of the sand beds. Installed in the bottom of each filter, these air pipes have proved most serviceable. When the sand beds of the filters are washed by reversing the flow of water, the air and water bubbling up together clean the sand decidedly better than has heretofore been possible.

During the past year the shipment of tropical fishes was facilitated by the construction of large wooden tanks to be used on board steamships. They are larger than any of the expensive galvanized shipping tanks used heretofore and proved to be more satisfactory. There is a decided advantage in carrying each lot of fishes in as large a body of water as possible.

It is believed that wooden shipping tanks will also last longer. Metal tanks are easily dented and rendered leaky by the rough handling they get on shipboard, while rust attacks them even when galvanized.

On shipboard it is not always possible to have the shipping tanks carried between decks, and in the cold weather of early spring when tanks are carried on the upper deck, tropical fishes may become chilled.

The wooden tanks undoubtedly keep the water warmer than it can be kept in metal tanks. This fact alone is a point decidedly in their favor. They are, of course, heavier and more difficult to handle, but on shipboard they can usually be hoisted by steam power. The cost of wooden tanks is less than half that of metal tanks of similar size.

An automatic stereopticon installed in December has proved an attractive exhibit. It carries fifty lantern slides illustrative of aquatic life and the methods of conducting aquarium work.

Visitors to the Aquarium have taken a decided interest in the splendid model of the proposed enlargement of the building. This model was moved to the Aquarium early in the year from the Museum of Natural History where it was first installed.

When visitors are informed that the City is not at present disposed to undertake its construction, there are frequent expressions of regret. It might be worth while to call for subscriptions from the public. If the public were to take an active interest by subscribing small sums, it is probable that public spirited citizens would come forward with generous donations.



RED GROUPE (*EPINEPHELUS MORIO*)



BLACK GROUPE (*MYCTEROPERCA BONACI*)

There has been some loss of water from the Aquarium reservoir in Battery Park. The piping system and the exhibition tanks have been repeatedly examined for leaks but without result. At times the loss has amounted to the lowering of the general water level from two to three inches a month.

The reservoir may have developed a small leak as the result of the heavy subway blasting that has been going on in Battery Park for several months. The losses have been made up by additions but it is now necessary to cut off and test each of the four sections of the reservoir in turn until the leak can be located, and this is being done.

SANITARY CONDITIONS.

It seems desirable to refer to this matter, as there is an impression in some quarters that the Aquarium is not as well ventilated as it might be. This is in part due to the fact that the Aquarium formerly had no mechanical system of ventilation. The installation of the Sturtevant system some years ago had the result of remedying this defect to a considerable extent. In warm weather when the building is crowded with visitors the air often becomes close.

Natural ventilation is almost lacking as the heavy walls of the Aquarium have few openings, and the windows of the second story are placed too high to affect the ground floor except on very windy days. It should be borne in mind that under such conditions perfect ventilation is difficult. This is due to the peculiar construction of the building.

Much of the labor of the Aquarium force is directed to the work of cleaning. The floors are carefully swept each evening and are washed every morning before visitors arrive. A vacuum cleaner is kept in regular use. The service galleries behind the exhibition tanks are kept well whitewashed, and washing and painting in various parts of the building is going on almost continuously. There can be little dirt in the Aquarium except what comes in various ways with the daily crowd of visitors.

While there is much that contributes to the soiling of floors and painted surfaces, cleaning goes on without cessation and the Director maintains that the Aquarium is well cared for in this respect. Some extension of the mechanical ventilating system is undoubtedly desirable, but the presence of large crowds of visitors must necessarily affect the air just as it does in theatres or other crowded buildings.

IMPROVEMENT OF THE EXTERIOR OF THE BUILDING.

The condition of the roof and other parts of the building in need of repair was brought to the attention of the Commissioner of Parks during the summer.

Funds from Special Revenue bonds to the amount of \$2,000.00 were secured and improvements were made under the supervision of the Park Department. These include refacing of the outer walls, repairs to the roof and strengthening of the archway of the rear entrance.

The refacing of the exterior surfaces of the walls was greatly needed, much of the old brown-stone finish having peeled off. While no ordinary expenditure could make the Aquarium building look like anything else than the fortification it was originally built for, the small sum spent on it has considerably improved its outside appearance.

THE EXHIBITS.

A census of the collections at the end of the year showed that there were in the Aquarium 3,186 fishes representing 140 different species; 95 aquatic reptiles of 23 species; 166 amphibians of 14 species; 3 aquatic mammals of 2 species and 2,338 invertebrates of 21 species. These figures do not include the product of the fish hatching exhibit, the young fishes being delivered from time to time to the State fish culturist for stocking public waters.

The quantity and variety of the exhibits as compared with those of the previous year necessarily show but little change. The Aquarium cannot increase the number of its exhibition tanks, the capacity of the building in this respect having been reached years ago.

The collection of tropical fishes is large and varied. The tanks devoted to this collection are well filled and the exhibits are always attractive to the public.

The collection of fresh water fishes includes most of the important species of eastern fishes.

The exhibits of other kinds of aquatic life are as large as the remaining space will permit. There are at present 5,688 specimens of all kinds in the building, representing 200 species. These being crowded into about 100 exhibition tanks make additions impossible.

Among the larger animals on exhibition may be mentioned porpoise, sea lion, sea turtle, alligator, crocodile, sturgeon and large jewfish—but the space that can be devoted to the larger forms is limited.

The conditions for keeping fishes are on the whole quite good—but the same cannot be said of aquatic mammals and reptiles which need more light than the building affords. The mechanical equipment of the Aquarium has been much improved during recent years and the condition of the living exhibits is better than ever before. This is largely due to the improvement of the water supply in general. Losses of specimens have been greatly lessened, and it is no longer necessary to do the constant collecting from local and tropical waters that was formerly imperative.

A porpoise (*Tursiops truncatus*) which had lived in the Aquarium for twenty-one months, was lost August 21. The cause of its death was a filth infection due to the foul condition of the water in the large pool where it was kept. Like the other large floor pools of the Aquarium it was filled with the sewage-laden water pumped from the Harbor.

The new filters which have since been installed for the purpose of filtering the Harbor water should protect the animal occupants of the floor pools from such dangers in future. Not only does the water flow continuously, but the pools are lowered each evening and cleaned with long-handled brushes. The water is now quite clean and clear, but its salinity remains, of course, still very low. Bacteria are doubtless still present in this water, despite its improvement by the filtering process.

The Zoological Society is indebted to the generosity of Mr. Joseph Keith Nye of New Bedford, Mass., for all porpoises of the genus *Tursiops* presented to the Aquarium. Mr. Nye is the proprietor of the porpoise fishery at Hatteras, N. C., and has offered to donate additional specimens. With his help the porpoise exhibit will be renewed and maintained.

The porpoises lost during the summer from filth infection and others from injuries received at the time they were captured, were by special request presented to the Wistar Institute of Anatomy in Philadelphia and to the Biological Department of Princeton University.



WHITE MARGATE, (*HAEMULON ALBUM*)



DOG SNAPPER, (*NEOMACROPODUS JAYAKERI*)

The large California sea lion (*Zalophus californianus*) continues in good health. It has been in the Aquarium eight years. The young sea lions deposited by Messrs. Travilla Brothers remain in good condition.

Three new species of tropical fishes from Key West, Florida, have been discovered in the living collections of the Aquarium during the past eighteen months. One of these, a large serranid (*Dermatolepis marmoratus*) Osburn and Mowbray, was described in *Zoologica*, February 25, 1915. Another, a grunt (*Haemulon crysopterum*) Mowbray, was described in the *Bulletin* of the Zoological Society for November, 1915. The third, an angel fish (*Angelichthys townsendi*), Nichols and Mowbray, was described in the *Bulletin*, American Museum of Natural History, October 8, 1914.

A penguin (*Spheniscus humboldti*) from the coast of Chili was presented early in July by Mr. W. O. Swatridge of Brooklyn. This aquatic bird was a decided attraction through the summer and autumn. It was kept in the sturgeon pool during the daytime, where it had a small raft on which to rest. At night it occupied an open pen on the gravel roof. It fed entirely on fresh fish cut in small slices, refusing all other kinds of food.

It became very tame, following its keepers anywhere about the building when called. The bird appeared to be thriving and enjoying life but it died suddenly in December.

A very large lobster taken by the fishing schooner *Stranger* from a depth of 100 fathoms on the tile fish banks was received in October.

It measured thirty-eight and one-half inches from end of large biting claw to tip of tail, and weighed fifteen and three-quarter pounds, the crushing claw having been lost and replaced by a new one only five inches long. Like other specimens from deep water it did not live long in captivity. This lobster was presented to the Brooklyn Museum.

Through the courtesy of the United States Bureau of Fisheries the fish hatching exhibit at the Aquarium was kept in operation during the greater part of the year; fish eggs of several species having been furnished from government hatcheries. The young fry were delivered to the State of New York as usual.



SQUIRREL FISH (*HOLOCENTRUS ASCENSIONIS*)



TIGER ROCKFISH (*MYCTEROPERCA TIGRIS*)

Nearly half a million yellow perch fry were deposited by employees of the Aquarium in the upper waters of Bronx River and in the larger park lakes of New York and Brooklyn. The eggs of yellow perch are easily hatched at the Aquarium and are obtainable in considerable quantities from certain localities in Long Island and elsewhere.

By a special arrangement with the aquariums in Philadelphia and Boston, 600 fishes were brought from Key West, Florida, 200 specimens being allotted to each institution. The New York Aquarium undertook the work of securing the collection, the expenses being paid by the other aquariums.

Several large Jewfishes brought from Florida in 1911 are still living and in good condition. These with other large species make an exceptionally interesting exhibit in one of the large floor pools and they should continue to thrive as all the floor pools are now receiving clean water from the new filters. The larger jewfishes in the pool vary in weight from 150 to 300 pounds.

Among the interesting arrivals at the Aquarium in December were specimens of the large Shasta salamander (*Autodax iecanus* Cope), from Shasta County, California. They were obtained by Mr. G. H. Lambson, Superintendent of the U. S. Fisheries Station on the McCloud River, and the species is known as yet from this locality only. The writer had collected specimens near the fishery station many years ago and requested Mr. Lambson to send living examples. These were packed in damp moss, together with several red-bellied salamanders (*Diemyctylus torosus*), all arriving in good condition.

Next in importance to the porpoises presented by Mr. Nye, are the frequent donations of fish eggs by the United States Bureau of Fisheries, already referred to.

Mr. Emil Gottsleben of Nassau, Bahamas, presented a tortoise shell turtle.

Mr. Frederick Bishop, President of the Iron Steamboat Company, presented a mounted specimen of the common black-fish weighing fourteen pounds.

The New Jersey Fish Commission presented 173 specimens of native fishes of nine different species.

Exchanges of specimens were made with the Fairmount Park Aquarium in Philadelphia.

The Director and Curators of the Aquarium have for some time entertained the opinion that the methods of feeding fishes should be modified. Among those lost from time to time were specimens which dissection showed to be excessively fat.

It was known from the work of Dr. MacCallum, Pathologist to the Aquarium, that the principal losses were due to parasites—but overfeeding might be causing losses that could be prevented.

It has always been the practice at the Aquarium to feed freely every day and it was decided to experiment for a time with feeding on alternate days only, yet allowing as much food to each tank as its occupants would consume.

The results of this method of feeding after several months trial were found to be satisfactory. The health of the fishes was apparently better, while the saving in cost and especially in the labor of preparing food was materially lessened.

Fishes in captivity have rather limited space for exercise, and some species still remain unnecessarily fat. Continued experiment may show that the food allowance could be further reduced with beneficial results.

A complete list of gifts to the Aquarium will be found elsewhere in this report.

The tropical fishes figured in this report, black grouper, red grouper, dog snapper, white margate, tiger rockfish and squirrel fish, are species which have long been exhibited at the Aquarium. They belong to the Florida and West Indies region, where they are regarded as excellent food fishes. The black grouper reaches a weight of 50 pounds. The red grouper grows even larger, and sometimes ranges north as far as Virginia. In the Aquarium it is much given to changing its markings and coloration which it often does instantly. The dog snapper is a fish of moderate size, and in Cuba is known as "jocu." The white margate is found from Florida to Brazil and is well known in West Indian markets.

Specimens of the tiger rockfish two feet long have been received, but, like some other species of groupers, it probably reaches a much larger size in deep water.

The squirrel fish is a well-known food fish, and is celebrated for its brilliant red coloration. It is known to reach a length of two feet.

All of these species thrive in captivity.

ATTENDANCE.

For the first time in many years the Aquarium has suffered a serious decrease in the number of visitors. There was a slight decrease in 1914 but the attendance did not fall below the two-million mark which was passed in 1906. The falling off in visitors in 1914 was attributed to conditions resulting from the war in Europe.

After the commencement of the war there was a general decrease in transatlantic steamship travel and in immigration, both of which served to limit the number of persons annually passing through New York City. These conditions continue. The twelve months of war of 1915 as compared with five months in 1914 produced a still more marked effect. Immigration from Europe has nearly ceased, and the legion of tourists going abroad has been reduced to a small remnant.

The attendance for 1915 was 1,538,831, a decrease of 490,876 as compared with 1914. The daily average of visitors was 4,215.

TABLE OF ATTENDANCE.

January	visitors.....	86,379	Daily average.....	2,786
February	“	100,034	“ “	3,572
March	“	110,055	“ “	3,550
April	“	133,119	“ “	4,437
May	“	181,998	“ “	5,870
June	“	152,699	“ “	5,089
July	“	178,260	“ “	5,750
August	“	163,517	“ “	5,274
September	“	140,615	“ “	4,687
October	“	122,170	“ “	3,940
November	“	104,537	“ “	3,484
December	“	65,448	“ “	2,111
Total	“	1,538,831	“ “	4,215

AN OUTSIDE PUMPING PLANT.

As there appears to be little prospect of a larger building for the Aquarium within a reasonable number of years, it seems desirable to reconsider the plan for an outside machinery plant to gain space for exhibits. The space occupied by the boiler



DOUBLE SERIES OF DISTRIBUTING TANKS.

By the removal of this and other mechanical equipment to an outside building, much exhibition space could be gained.



NEW FILTERS FOR FILTERING WATER PUMPED FROM NEW YORK HARBOR

These tanks were originally used as distributing tanks.

and pump rooms on the ground floor is equal to one-fourth of the space now devoted to glass-fronted tanks. The same is true of the tank room space above as compared with the series of glass-fronted tanks on the gallery.

The space now occupied by machinery on the ground floor would afford room for several glass-fronted tanks much larger than any now in the building, while the space above them would provide the Aquarium with a feature it has never had—a well lighted exhibition room for the smaller and more delicate forms of aquatic life. The outside machinery plant need not encroach upon Battery Park as it could be built upon the shoal behind the Aquarium.

LABORATORY.

To add another story to the front of the Aquarium would be a comparatively simple matter and would afford ample room for laboratory work not possible under present conditions.

There is nearly always at the Aquarium a large amount of material from both fresh and salt water available for biological investigation. This material is not being utilized for scientific investigation for lack of facilities for studying it.

A well equipped biological laboratory would be of great benefit to the Aquarium itself, as well as to science. There is but little known of the life of most of our aquatic animals. The embryology, physiology and adaptations of these forms offer interesting fields for investigation.

The Aquarium has frequent requests from investigators for assistance in the matters of laboratory space and material. It is even now sharing its limited office space with a special investigator of the United States Bureau of Fisheries and material is constantly being supplied for researches conducted under the auspices of our city educational institutions.

Among the well known investigators who have been supplied are Professor Loeb of the Rockefeller Institute, Professor McClure of Princeton University and Professor Morgan of Columbia.

Considerable quantities of small sea shore invertebrates are annually given to school teachers for class work.

The Aquarium should be so equipped that it could take care of investigators in a way that would be creditable to the Zoological Society.



CALIFORNIA SALAMANDERS, AUTODAX IECANUS (COPE).
McCloud River, California.

Most of the biological laboratories of this country are open in summer only. A laboratory at the Aquarium would be of service throughout the year and the solution of problems requiring long experiment would be greatly facilitated. The Aquarium's collector could easily secure much more material for special studies than is now brought in.

Important pathological studies have long been carried on, based entirely on material supplied from the Aquarium.

The Aquarium Committee, composed of prominent zoologists, has frequently recommended that proper laboratory facilities be afforded in the building.

Tentative plans for an outside pumping plant, and a laboratory to be located above the present offices, have been made. The cost for both would not exceed \$100,000. The plans are similar to those suggested by the Director in the Report of the Zoological Society for 1909.

Mr. John J. DeNyse, for many years employed as zoological collector for the Aquarium, became incapacitated for duty and was pensioned in December, but illness was more serious than was suspected and his death occurred before the close of the year.

Dr. Raymond C. Osburn severed his connection with the Aquarium on September 30, 1915, to accept the chair of Biology in Connecticut College at New London. Dr. Osburn had served as Assistant Director since 1910, in connection with his duties in Columbia University. His withdrawal is a distinct loss to the Aquarium and the Zoological Society.

Dr. G. A. MacCallum has for several years studied the parasites of fishes in the Aquarium. He examined many fishes during the past year and has shown that most of the losses of specimens are attributable to parasites. A paper by Dr. MacCallum, based on these studies, and entitled, "Some New Species of Ectoparasitic Trematodes," was published by the New York Zoological Society in *Zoologica* in June. It contains descriptions and illustrations of six new species. A similar paper has since been prepared and will shortly be published by the Zoological Society. Dr. MacCallum has been appointed pathologist to the Aquarium in recognition of his services to the institution.

Mr. Chapman Grant who had been a member of the staff in 1910 and 1911 returned to the Aquarium in December after two years of service as a second lieutenant in the Fourteenth

Cavalry. His decided interest in zoology led to his re-entering the service of the Aquarium where he is now Curator of fresh-water collections. A considerable part of his time will be spent in zoological collecting.

Mr. Roswell Morse Shurtleff, a member of the Aquarium Committee, died January 6, 1915, at the age of seventy-five. He had been a member of the Committee since 1902.

Dr. Sergius Morgulis who has been studying the subject of nutrition in fishes under the auspices of the United States Bureau of Fisheries continued at the Aquarium the work begun there by him in 1914.

At the request of the United States Bureau of Fisheries office facilities were provided at the Aquarium for a few weeks for Mr. Thos. M. Douthart who had been detailed by the Bureau to conduct a campaign for the introduction of the tilefish into the markets of New York and Boston. A fishing vessel chartered by the Bureau, landed several fares in New York and other vessels soon engaged in the fishery. The results hoped for were realized and the tilefish has already taken an important place in the fish trade of New York and other cities.

OLD PRINT OF THE AQUARIUM BUILDING.

The color print showing the Aquarium building, formerly known as Castle Garden, in 1850, is an excellent copy of the original in the collection of the Down Town Association. It is one of the few color prints of this old structure, and the Director of the Aquarium is indebted to the House Committee of the Down Town Association for permission to reproduce it in this report.

According to the legend on the original it was "Drawn by C. Autenreith," "Published by Henry Hoff, 180 William St., New York," and "Entered according to Act of Congress in the year 1850."

Other old prints of the Aquarium building have been reproduced in the publications of the Zoological Society as follows: *Bulletin* of the Zoological Society, April, 1907; April, 1908; March, 1910; March, 1914; March, 1915; March, 1916. Report of the Zoological Society, 1906.

As has been the practice for many years, the Aquarium continues to assist teachers of biology in the city schools in

maintaining small aquaria in their class rooms. The living forms supplied are chiefly small invertebrates, obtained from the adjacent coast by the Aquarium's collector.

When specially requested, a man from the Aquarium assists teachers in establishing their aquaria. The subject of natural history is made more interesting by the use of aquaria, and many teachers avail themselves of the specimens offered.

Since the year 1903 there have been daily records kept at the Aquarium on the temperature and salinity of the water of New York Harbor. These records are unique for New York City and have been useful not only at the Aquarium but proved very valuable to Metropolitan Sewerage Commission during the investigations of the past few years. The records have been published from time to time in the reports of the Director of the Aquarium and are herewith presented for later years.

Record of monthly mean temperatures and specific gravities at the New York Aquarium during the period from 1912 to 1915, inclusive.

(From daily observations made by Mr. W. I. DeNyse*.)

	1912		1913		1914		1915	
	Temp.	Spec.	Temp.	Spec.	Temp.	Spec.	Temp.	Spec.
	Water	Gravity	Water	Gravity	Water	Gravity	Water	Gravity
January	38	1.016	44	1.011	44	1.016	40	1.015
February	36	0.017	43	1.013	37	1.015	39	1.013
March	38	1.013	42	1.013	38	1.014	40	1.013
April	43	0.010	46	1.010	.....	.....	44	1.014
May	50	1.011	.....	.....	50	1.011	52	1.014
June	58	1.014	.....	.....	58	1.015	58	1.016
July	66	1.016	67	1.016	64	1.015	64	1.014
August	68	1.017	70	1.017	69	1.016	69	1.013
September	68	1.017	70	1.017	68	1.016	69	1.014
October	64	1.017	65	1.016	64	1.017	63	1.015
November	58	1.014	57	1.014	57	1.017	56	1.015
December	49	1.013	51	1.015	46	1.016	42	1.014

During the year 914 specimens were purchased by the New York Zoological Society as follows:

Four Blue Angelfishes, 15 Black Angelfishes, 5 Rock Hinds, 3 Red Hinds, 7 Shark Suckers, 2 Filefishes, 25 Spiny Lobsters, 42 Eels, 1 Sheephead, 29 Porkfishes, 2 Red Groupers, 3 Spotted Morays, 5 Green Morays, 2 Cowfishes, 9 Gray Snappers, 26 Stone Crabs, 2 Jolt-head Porgies, 2 Little-head Porgies, 9 Grass Porgies, 17 White Grunts, 14 Spot Snappers, 15 Red Hogfishes, 2 Gags, 3 Black Groupers, 4 Dog Snappers, 11 Common Triggerfishes, 9 Margates, 5 Pompano, 11 Chubbs, 7 Bream, 6 Yellowtails, 4 Spadefishes, 5 Jacks, 3 Blue-striped Grunts, 7 Schoolmasters, 6 Muttonfishes, 1 Nassau Grouper, 11 Squirrelfishes, 1 Doctorfish, 1 Moray (*Lycodontis*), 5 Scamp, 6 Red Groupers, 6 Gray Grunts, 2 Sea

*Density observations were made with samples of water brought to a temperature of 60 degrees Fahr.

Catfishes, 1 Yellow-finned Grouper, 1 Rainbow Parrotfish, 6 Red Snappers, 6 Graysby, 3 Common Sting Rays, 1 Batfish, 37 Striped Bass, 13 Mullet, 12 Flounders, 15 Fluke, 11 Spotted Codling, 7 Butterfishes, 19 Menhaden, 5 Mass. Filefishes, 3 Orange Filefishes, 20 Blackfishes, 3 Spots, 1 Silver Gar, 5 Sea Robins, 31 Spiny Boxfishes, 6 Bluefishes, 7 Toadfishes, 1 Kingfish, 1 Sturgeon, 4 Hake, 5 Weakfishes, 1 Sea Bass, 4 Slimy Toadfishes, 1 Conger Eel, 1 Mackerel, 1 Sculpin, 1 Sea Raven, 1 Hawksbill Turtle, 297 Seahorses, 1 Porpoise (*Delphinus*), 12 Mantis Shrimp, 2 Green Turtles, 1 Lady Crab, 12 Hellbenders.

In the same period 476 specimens were donated to the New York Zoological Society, as follows:

Fifteen Goldfishes, 20 Alligators, 1 Golden Orfe, 98 Brook Trout, 25 Rainbow Trout, 16 Brown Trout, 26 Landlocked Salmon, 15 Large-mouth Black Bass, 4 Small-mouth Black Bass, 6 Bullfrogs, 6 Millers Thumbs, 1 Amazon Turtle, 21 Painted Turtles, 9 Snapping Turtles, 8 Wood Turtles, 2 Musk Turtles, 1 Spotted Turtle, 3 Calico Bass, 7 Pickerel, 31 Yellow Perch, 29 Sunfishes, 27 Salamanders (3 varieties), 3 Cumberland Turtles, 1 Yellow-bellied Slider Terrapin, 1 Penguin, 2 Box Turtles, 1 Loggerhead Turtle, 1 Moonfish, 3 Lobsters, 3 Green Turtles, 6 Sumatra Fishes (5 varieties), 1 Soft Shelled Turtle, 1 Spiny Boxfish, 1 Skate, 2 Winter Flounders, 10 Sea Scallops, 1 Whelk, 3 Dogfishes, 1 Angler, 4 Mud Starfishes, 13 Crayfishes, 4 Fresh-water Mussels, 2 Diamond-back Terrapin, 1 Mud Turtle, 1 Water Toad, 7 Yellow-bellied Salamanders, 5 Brown Salamanders, 1 Reeves Terrapin, 1 Crocodile, 1 Natica, 1 Orange Filefish, 1 Hawksbill Turtle, 2 Sea Cucumbers, 2 Mussels, 2 Hermit Crabs, 2 Seahorses, 1 Catfish, 1 Mudpuppy, 1 Eel, 1 Rock Crab, 1 Conch, 8 Porpoises (*Tursiops truncatus*), 1 Hair Seal.

The total of 1,390 specimens were received during the year by purchase and donation.

Respectfully submitted,

CHARLES H. TOWNSEND, *Director*.

REPORT OF THE PROSECTOR TO THE BOARD OF MANAGERS.

I BEG to submit the following report on the operations of the Prosector's department for the period from December 31, 1914, to January 1, 1916:

Material received.—A total of 225 specimens, divided as follows:

Primates	62	Cetaceans	2
Carnivores	39	Birds	43
Ungulates	19	Reptiles	17
Rodents	24	Fish	2
Edentates	7		
Marsupials	10	Total	225

This material has, as heretofore, been used in the research work of the Anatomical Department of Columbia University.

1. The brain has been removed and preserved in all forms by Professor Tilney and Dr. Smith. The former has extended his researches on the morphology of the hypophysis, already published in part, to the important new forms received during the past year.

The Department of Neurology is undertaking an extensive research on the architectonics of the primate brain in serial sections, with a detailed study of the fibre tracts. The unusual number of primate brains received from the Zoological Society during the year has greatly aided this important investigation. The anthropoid brains have been of especial value, including several specimens of the orang and one each of gorilla and hoolock gibbon.

2. The Prosector and Professor Schulte have continued their investigation into the morphology of the mammalian salivary structures, extending the same to include the avian and reptilian forms. The earlier results of this research were published as Vol. IV, under the George Crocker Special Research Fund of Columbia University in 1913. The material received and studied since then is now awaiting the opportunity of a second publication on the subject.

3. The Prosector has utilized all the material received in prosecuting the investigation into the phylogeny of the vertebrate lung, which has extended over a number of years. The portion of the work dealing with the mammalian respiratory tract is now completed and also awaits an opportunity for publication.

4. Drs. Grace and McGuire have been engaged during the year in a detailed study of the myology of the anthropoid apes. The receipt of the body of the young gorilla has enabled them to complete this series, which now includes specimens of all four representatives of the group.

5. The preparations of the alimentary canal, the genito-urinary system, and the heart have all been added to the standard series in the Morphological Museum.

Respectfully submitted,

GEO. S. HUNTINGTON,
Prosector.

Treasurer's Report

FOR THE YEAR ENDING DECEMBER 31, 1915.

RECEIPTS AND EXPENDITURES

OF THE

Income Account

Schedule 1.

Unexpended Balance as of December 31, 1914:		
Available for expenditure during 1915	\$15,858.88	
Received from Sustaining Memberships in advance for 1916, 1917, 1918	120.00	
<i>Investments:</i>		
\$6,000 New York, Lackawanna & Western Terminal		
4% Bonds	5,940.00	\$21,918.88

RECEIPTS.

Annual Dues	\$16,550.00	
Sustaining Memberships	680.00	
Special Subscriptions:		
Oil Paintings of American Wild Game	\$6,600.00	
Miscellaneous	20.00	6,620.00
Transfer from Endowment Fund Income Account	20,839.12	
Interest on bank balances	321.17	
Interest on investments	240.00	45,253.29
		<hr/> \$67,172.17

EXPENDITURES.

Annual and separate Reports	\$ 2,427.30
Bulletin	2,796.07
Photographs and slides	1,567.88
Preparation and mailing of circulars	897.70
Zoologica	1,290.34
Cost of distribution of publications	85.85
Expenses, Annual Meeting	649.00
Expenses of Receptions	1,085.40
Treasurer's office expenses	1,006.00
General office expenses	2,937.07
Audit of accounts	734.00
Employer's insurance	1,092.01
Salary of Secretary	5,000.00
Aquarium expenses	192.50
Office supplies and printing	2,260.72
Aquarium specimens	1,466.64
Heads and Horns (publications and labels)	11.00
Heads and Horns Fund (transfer)	1,000.00
Library Fund (transfer)	500.00
Salary of Assistant Secretary	999.96
Oil Paintings of American Wild Game	3,629.35
Laboratory for Curator of Birds	187.88
Aid to Employees	494.00
Carried forward	<hr/> \$32,310.67

<i>Brought forward</i>	\$32,310.67	
*Pension Fund Income Account	3,433.37	
Engineering expenses	700.00	
Insurance	112.50	
Carnegie Pension Fund	66.25	
Miscellaneous expenses	2,259.16	38,881.95
<hr/>		
Unexpended balance as of December 31, 1915:		
Available for expenditure during 1916	\$19,489.57	
Received from Sustaining Memberships in advance for 1917, 1918	80.00	
Received on account of subscriptions to Oil Paintings of American Wild Game for 1916, 1917, 1918, 1919	3,770.65	
<hr/>		
<i>Investments:</i>		
\$5,000 New York, Lackawanna & Western Terminal 4% Bonds (one bond sold during year for \$990) \$	4,950.00	\$28,290.22
		<hr/>
		\$67,172.17

H. R. MITCHELL,
Chief Clerk.
January 1, 1916.

PERCY R. PYNE,
Treasurer.

Maintenance Fund ZOOLOGICAL PARK

Schedule 2.

RECEIPTS.

Received from the City on account of Park Maintenance Appropriation of \$200,000.00 for the year	\$176,146.83	
Due from the City on account of Park Maintenance Ap- propriation	23,853.17	\$200,000.00

EXPENDITURES.

Maintenance of buildings and care of collections	\$ 57,951.93
Maintenance and care of grounds	52,828.43
General administration	19,470.92
Food for animals	40,555.11
Fuel	9,379.51
Lumber	1,757.89
Hire of horses and vehicles	1,510.01
Uniforms and badges	1,419.24
Tools and machinery	1,403.48
Electric service	1,361.29
Paints and oils	1,321.26
Miscellaneous supplies	1,144.49
Miscellaneous materials	924.65
Office supplies	890.04
Plumbing materials	781.18
Telephone service	768.27
Miscellaneous equipment	665.02
Steel and iron	654.50
<hr/>	
<i>Carried forward</i>	\$194,787.22

*Shortage of \$250.00 in Society's payment to pension fund for the year added in 1916.

<i>Brought forward</i>	\$194,787.22	
Janitors' supplies	565.06	
Stationery and printing	490.83	
Fuel oil and gasoline	383.20	
Disinfectants	349.15	
Bolts, nails and hardware	345.44	
Expressage and deliveries	316.85	
Office furniture and fixtures	308.89	
Janitors' equipment	296.30	
Sand, cement and brick	208.35	
Rubber hose	193.50	
Fencing and netting	191.19	
Sanitary service	178.00	
Apparatus and machinery repairs	169.23	
Drugs and medicines	162.01	
Nursery stock and seeds	131.45	
Electrical materials	125.85	
Lubricating oils	91.17	
Painters' equipment	86.84	
Miscellaneous repairs	78.28	
Glaziers' supplies	75.50	
Painting labels	74.00	
Telegraph, cable and messenger service	68.86	
Mats and floor coverings	65.65	
Gas service	41.12	
Medical attendance (employees)	40.00	
Nursery supplies	29.20	
Ice	26.10	
Surgical instruments	25.60	
Harness and vehicle repairs	24.90	
Medical and surgical supplies	21.86	
Awnings and shades	21.25	
Engineering supplies	20.15	
Furnace repairs	6.00	
Miscellaneous expenses	1.00	\$200,000.00

H. R. MITCHELL,
Chief Clerk.
 January 11, 1916.

PERCY R. PYNE,
Treasurer.

Ground Improvement Fund

Schedule 3.

Unexpended balance as of December 31, 1914:			
Construction of Hospital Building	\$ 7,518.32		
Erection and Equipment of Power Plant and Work Shops	91.19		
Construction of Fences and Other Permanent Im- provements	34.40		
Miscellaneous items to be rescinded by the City	19.52	7,663.43	
<i>By reduction in contracts:</i>			
Erection of New Zebra House	\$ 80.00		
Pavilion east of Bronx River	50.40	130.40	
By balance in Zebra House Yards appropriation	518.32	648.72	
			\$8,312.15

Balances rescinded by the City:

Erection of New Zebra House.....	\$	70.00	
Zebra House Yards.....		518.32	
Developments East of Bronx River.....		.40	
Miscellaneous items.....		19.52	608.24
			<hr/>
Transferred to New Hospital appropriation.....			7,518.32

EXPENDITURES.

By the Zoological Society:

Construction of Fences and Other Permanent Im-			
provements:			
Miscellaneous	\$	17.50	

By the Zoological Society Through Park Department:

Construction of Fences and Other Permanent Im-			
provements:			
Miscellaneous	\$	13.00	
Developments, East of Bronx River:			
Pavilion east of Bronx River.....		50.00	80.50

Balance available for expenditure, December 31, 1915:

Erection and Equipment of Power Plant and Work			
Shops	\$	91.19	
Construction of Fences and Other Permanent Im-			
provements		3.90	
Erection of New Zebra House.....		10.00	105.09
			<hr/>
			\$8,312.15

1915 GROUND IMPROVEMENT ACCOUNTS.

Construction of Hospital Building:

Transferred from 1914 account.....	\$	7,518.32	
Appropriation available in January, 1915.....		15,000.00	\$22,518.32

EXPENDITURES.

Contract H. H. Vought & Co., Hospital Bldg.....	\$15,696.00		
Contract Jos. B. Brady, Drainage and Water Supply			
System		800.00	
Contract J. Levins, Hot Water Heating Plant.....		1,337.00	17,833.00

<i>By the Zoological Society</i>		892.16	
“ “ “ “ “ <i>Through Park Department</i>		90.26	
Balance available December 31, 1915.....		3,702.90	
			<hr/>
			\$22,518.32

Steel Fence on 180th Street, East of Bronx River:

Appropriation available in January, 1915.....	\$	1,125.00	
No expenditures.			
Transferred to “Constructing Sliding Door and Reinforc-			
ing Elephant House Fence”	\$	1,125.00	

Construction Sliding Door and Reinforcing Elephant House Fence:

Appropriation available in April, 1915.....	\$	1,125.00	
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EXPENDITURES.

<i>By the Zoological Society</i>	\$ 693.20	
" " " " <i>Through Park Department</i>	320.66	1,013.86
Balance available, December 31, 1915		<u>111.14</u>
		\$ 1,125.00

Six New Drinking Fountains:

Appropriations available in January, 1915	\$ 600.00
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EXPENDITURES.

<i>By the Zoological Society</i>	\$ 336.48	
" " " " <i>Through Park Department</i>	263.52	\$ 600.00

New Paint and Oil Storage Shed:

Appropriation available in January, 1915.....		\$	300.00
Through Park Department.....	\$	156.25	
Balance available December 31, 1915.....		143.75	\$ 300.00

Poultry Breeding House:

Appropriation available in January, 1915	\$ 1,400.00
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EXPENDITURES.

<i>By the Zoological Society</i>	\$ 659.22	
" " " " <i>Through Park Department</i>	740.15	1,399.37
Balance available, December 31, 1915		<u>.63</u>
		\$1,400.00

Paving Bottom of Duck Pond:

Appropriation available in November, 1915	\$ 3,000.00
--	--------------------

EXPENDITURES.

<i>By the Zoological Society</i>	\$ 940.34	
Balance available, December 31, 1915	2,059.66	
		<u>\$ 3,000.00</u>

H. R. MITCHELL,
Chief Clerk.
January 1, 1916.

PERCY R. PYNE,
Treasurer.

Animal Fund

Schedule 4.

Unexpended balance as of December 31, 1914:

Cash in Bank.....	\$10,414.12	
Cash on hand.....	100.00	\$10,514.12

RECEIPTS.

Special Subscriptions:

The Junior Auxiliary	\$500.00	
*Grant B. Schley.....	500.00	
*Edw. S. Harkness.....	250.00	1,250.00

Receipts from Park:

Checking	\$ 38.65	
Miscellaneous	65.25	
Sale of Animals.....	1,559.70	
Privilege Account, on account of 1915 receipts	5,000.00	\$ 6,663.60
		7,913.60

*For purchase of animals during 1916.

\$18,427.72

EXPENDITURES.

Mammals	\$ 4,270.60	
Birds	5,048.42	
Reptiles	1,108.29	
Insect Collection	125.27	10,552.58
Express and other charges.....	\$ 1,213.42	
Travelling and other expenses.....	1,463.41	2,676.83

Unexpended balance as of December 31, 1915:

Cash in Bank.....	\$ 5,098.31	
Cash on hand	100.00	5,198.31

\$18,427.72

H. R. MITCHELL, *Chief Clerk.*
January 1, 1916.PERCY R. PYNE, *Treasurer.***Stokes' Bird Fund**

Schedule 5.

Unexpended balance as of December 31, 1914:

Cash in bank.....	\$ 134.69	
Investment: \$5,000 Illinois Central Railway 4% Gold Bonds	5,056.46	5,191.15

RECEIPTS.

Interest on investment.....	\$ 200.00	
		\$5,391.15

EXPENDITURES.

Preservation of bird life.....	\$ 54.90	
Miscellaneous expenses	2.50	57.40

Unexpended balance as of December 31, 1915:

Cash in bank.....	\$ 277.29	
Investment: \$5,000 Illinois Central Railway 4% Gold Bonds	5,056.46	5,333.75

\$5,391.15

H. R. MITCHELL, *Chief Clerk.*
January 1, 1916.PERCY R. PYNE, *Treasurer.*

National Collection of Heads and Horns

Schedule 6.

Unexpended balance as of December 31, 1914 \$ 280.27

RECEIPTS.

Special Subscriptions:

John H. Eagle \$ 50.00
 John J. Paul 15.00 65.00

Income Account (transfer) 1,000.00
 \$ 1,345.27

EXPENDITURES.

Heads and Horns \$ 832.94
 Express and other charges 28.59
 Miscellaneous expenses 163.38 1,024.91

Unexpended balance as of December 31, 1915..... 320.36
 \$ 1,345.27

H. R. MITCHELL,
Chief Clerk.
 January 1, 1916.

PERCY R. PYNE,
Treasurer.

Library Fund

Schedule 7.

Unexpended balance as of December 31, 1914..... \$ 146.57

RECEIPTS.

Income Account (transfer)..... 500.00
 \$ 646.57

EXPENDITURES.

Subscription to periodicals \$ 84.19
 Books, Pamphlets, etc. 352.26
 Express and other charges 15.44
 Miscellaneous expenses 100.00 551.89

Unexpended balance as of December 31, 1915 94.68
 \$ 646.57

H. R. MITCHELL,
Chief Clerk.
 January 1, 1916.

PERCY R. PYNE,
Treasurer.

Maintenance Fund**AQUARIUM****Schedule 8.****RECEIPTS.**

Received from the City on account of Aquarium Maintenance Appropriation of \$47,000.00 for the year.....	\$39,096.91	
Due from the City on account of Aquarium Maintenance Appropriation	7,894.75	
Unexpended balance	8.34	\$47,000.00

EXPENDITURES.

Salaries	\$32,295.87	
Fish food	2,096.35	
Fuel supplies	4,459.11	
Office supplies	185.26	
Laundry, cleaning and disinfecting supplies	91.77	
Refrigerating supplies	109.93	
General plant supplies	423.78	
Office equipment	57.00	
General plant equipment	2,257.74	
General plant materials	689.35	
Repairs	2,403.28	
Lighting	1,302.14	
Expressage	280.42	
Telephone	149.32	
Contingencies	113.14	
Wearing apparel	77.20	
Unexpended balance	8.34	\$47,000.00

ROBERT SUTCLIFFE,
Clerk.
January 27, 1916.

PERCY R. PYNE,
Treasurer.

New Building Fund**AQUARIUM****Schedule 8-A.**

Corporate Stock C. D. P. No. 92.

Construction of Foundations and Wall of Wings, New York Aquarium,
Battery Park.

Balance on hand as per last report \$ 100.00

EXPENDITURES.

Roine & Weil, moving model of new building from the American
Museum of Natural History to Aquarium \$ 100.00

MORRIS MAYER,
*Bookkeeper, Department of Parks,
Manhattan and Richmond.*

Endowment Fund

Schedule 9.

Funds as of December 31, 1914:

Cash in Bank	\$ 264.05	
Investments at cost	323,698.75	\$323,962.80

RECEIPTS.

Endowment Fund:

Estate of Mrs. Morris K. Jessup.....	\$13,750.00	
Estate of Jacob Langeloth	1,000.00	14,750.00

Life Memberships		1,600.00
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\$340,312.80

Investments as of December 31, 1915, at cost:

\$20,000 Westchester Racing Association 5% First Mortgage Bonds	\$ 20,000.00	
3,000 Second Mortgage, Clara N. Gibert and others, 6% over land and buildings, Broadway and 17th Street	3,000.00	
5,000 Colorado & Southern 4% Bonds	4,750.00	
5,000 Michigan Central R. R. Co. 4% Bonds	4,950.00	
10,000 New York City 1957 4% Corporate Stock	9,925.00	
10,000 New York City 1957 4% Corporate Stock	9,962.50	
20,000 New York City 1958 4% Corporate Stock	19,875.00	
10,000 New York City 1958 4% Corporate Stock	9,962.50	
13,400 New York City 1965 4½% Corporate Stock	13,651.25	
10,000 St. Paul, Minneapolis & Manitoba 4% Bonds	9,800.00	
50,000 U. S. Steel Sinking Fund 5% Bonds	51,812.50	
50,000 American Telephone & Telegraph 4% Bonds	45,000.00	
25,000 Rhode Island Suburban Ry. Co. 4% Bonds	21,250.00	
20,000 Chicago & Northwestern Ry. Co. General Mortgage 4% Bonds	19,750.00	
20,000 Vandalia Railroad Co. Consolidated Mortgage 4% Bonds	19,400.00	
5,000 Missouri & Illinois Bridge & Belt R. R. Co. 1st Mortgage 4% Bonds	5,000.00	
10,000 Chicago, Milwaukee & Puget Sound, 1st Mortgage 4% Bonds	9,525.00	
12,000 Chicago, Milwaukee & Puget Sound 1st Mortgage 4% Bonds	11,250.00	
5,000 New York, Lackawanna & Western 4% Terminal Improvement Bonds	4,950.00	
20,000 Milwaukee, Sparta & Northwestern 1st Mortgage 4% Bonds	18,900.00	
25,000 New York & Westchester Lighting Company General Mortgage 4% Gold Coupon Bonds	19,750.00	
1,000 Morris & Essex R. R. 3½% Bond	876.25	
5,000 Illinois Central and Chicago, St. Louis & New Orleans joint 5% Bonds	5,000.00	338,340.00

Uninvested balance, December 31, 1915		1,972.80
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\$340,312.80

H. R. MITCHELL,
Chief Clerk.
January 1, 1916.

PERCY R. PYNE,
Treasurer.

Endowment Fund Income Account

Schedule 10.

Unexpended balance as of December 31, 1914 \$ 6,206.32

RECEIPTS.

Interest collected from Endowment Fund Investments..... 14,706.50

\$20,912.82

EXPENDITURES.

Accrued interest on bonds at time of purchase \$ 73.70

Transferred to Income Account 20,839.12

\$20,912.82

H. R. MITCHELL,
Chief Clerk.
January 1, 1916.

PERCY R. PYNE,
Treasurer.

Cadwalader Animal Fund

Schedule II.

Unexpended balance as of December 31, 1914:

Cash in Bank \$ 188.89

Investment: \$20,000 (at par) Illinois Central and Chicago, St. Louis & New Orleans joint 5% Bonds... 20,000.00 \$ 20,188.89

RECEIPTS.

Interest on investment 1,000.00

\$21,188.89

EXPENDITURES.

Purchase of animals 400.00

Unexpended balance as of December 31, 1915:

Investment: \$20,000 (at par) Illinois Central and Chicago, St. Louis & New Orleans joint 5% Bonds... \$20,000.00

Cash in bank 788.89 20,788.89

\$21,188.89

H. R. MITCHELL,
Chief Clerk.
January 1, 1916.

PERCY R. PYNE,
Treasurer.

Wild Life Fund

Schedule 12.

Unexpended balance as of December 31, 1914 \$ 517.45

RECEIPTS.

Sale of "Our Vanishing Wild Life" 198.75

\$716.20

EXPENDITURES.

Telegraph and express \$ 29.73

Miscellaneous expenses 37.83 \$ 67.56

Unexpended balance as of December 31, 1915 648.64

\$716.20

H. R. MITCHELL,
Chief Clerk.
January 1, 1916.

PERCY R. PYNE,
Treasurer.

Improvement and Repair Account

Schedule 13.

Unexpended balance as of December 31, 1914 \$ 1,269.19

RECEIPTS.

Gate Receipts	\$9,588.65	
Miscellaneous receipts	80.38	9,669.03

\$10,938.23

EXPENDITURES.

Large bird house repairs	\$ 490.74	
Deer range	233.92	
Bear dens	66.93	
Primates house	59.33	
Walk repairs	3,720.89	
Flying cage	366.87	
Heating repairs	1,064.50	
Guard rails	28.05	
Lion house	29.96	
Miscellaneous	488.83	
Retaining wall in service yard	396.84	
Goose aviary	519.30	
Repairing entrances	324.30	
Pheasant aviary	684.86	
Mountain sheep hill	52.08	
Mammal house repairs	138.43	
Restaurant repairs	55.00	
Repairs to deer and buffalo barns	365.03	
Aquatic bird house repairs	90.00	9,175.86

Unexpended balance as of December 31, 1915 1,762.36

\$10,938.23

H. R. MITCHELL,
Chief Clerk.
January 1, 1916.

PERCY R. PYNE,
Treasurer.

Carnegie Pension Fund

Schedule 14.

Funds as of December 31, 1914:

Cash in Bank	\$ 748.14	
Investments at cost	99,248.75	\$ 99,996.89

Adjustment of interest on bonds at time of purchase	3.11	\$100,000.00
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RECEIPTS.

Contribution from New York Zoological Society.....	66.25
--	-------

Funds as at December 31, 1915 \$100,066.25

Investments at cost:

\$25,000 Philadelphia & Baltimore 1st Mortgage 4% Gold Bonds	\$23,250.00
25,000 Lehigh Coal & Navigation 4½ % Bonds	24,875.00
25,000 Illinois Central 4 % Bonds	23,062.50

Carried forward	\$71,187.50
-----------------------	-------------

<i>Brought forward</i>	\$71,187.50	
5,000 Morris & Essex 3 ½ % Bonds	4,373.75	
25,000 Chicago & Northwestern 4 % Bonds	23,687.50	
1,000 Michigan Central 3 ½ % Bond	817.50	\$100,066.25

H. R. MITCHELL,
Chief Clerk.
 January 1, 1916.

PERCY R. PYNE,
Treasurer.

RECEIPTS AND EXPENDITURES

OF THE

Pension Fund Income Account

Schedule 15.

Unexpended balance as of December 31, 1914:

Deposited with Farmers' Loan & Trust Co.	\$ 3,639.95	
Deposited with Corn Exchange Bank (Bronx)	540.32	\$ 4,180.27

RECEIPTS.

Interest on bank balances		63.78
Interest on bond investments		362.50
Dues collected from Zoological Society Employees		3,172.18
<i>Contributed by New York Zoological Society:</i>		
Interest on Carnegie Pension Fund Investments.....	\$ 4,335.00	
Cash Payments, year 1915	3,415.00	*7,750.00
		<u>\$15,528.73</u>

EXPENDITURES.

Refund of dues with accrued interest to resigning mem- bers	\$ 89.82	
Clerical services	250.00	
Physical examinations (made by Dr. G. J. Van der Smitsen)	19.00	
John J. De Nyse, first pension payment	30.00	\$ 388.82

Investments at cost:

\$5,000 New York City 4 ½ % Bonds.....	\$5,093.75	
\$5,000 Illinois Central and Chicago. St. Louis & New Orleans Ry. joint 5 % Bonds.....	4,981.25	10,075.00

Accrued interest on above bonds when purchased	96.46	10,171.46
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Unexpended balance as of December 31, 1915:

Deposited with Farmers' Loan & Trust Co.	\$ 4,595.77	
Deposited with Corn Exchange Bank (Bronx)	372.68	4,968.45

\$15,528.73

H. R. MITCHELL,
Asst. to Treas.
 January 1, 1916.

PERCY R. PYNE,
Treasurer.

*Balance of \$250.00 due from the Zoological Society on 1915 account to be contributed early in 1916.

Tropical Research Fund

Schedule 16.

RECEIPTS.

Special Subscriptions:

James J. Hill	\$ 1,000.00	
Cleveland H. Dodge	1,000.00	
C. Ledyard Blair	1,000.00	
Mortimer L. Schiff	1,000.00	
George J. Gould	1,000.00	\$ 5,000.00

Unexpended balance as of December 31, 1915	\$ 5,000.00
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H. R. MITCHELL,
Chief Clerk.
January 1, 1916.

PERCY R. PYNE,
Treasurer.

MARWICK, MITCHELL, PEAT & CO.

CHARTERED ACCOUNTANTS

27 WALL STREET

NEW YORK

Auditors' Certificate

We have audited the books and accounts of the New York Zoological Society and of the "Carnegie Pension Fund" for the year ended December 31, 1915, and certify that the foregoing Schedules "1" to "16" of cash receipts and expenditures are in accordance with the books, and correctly record the transactions relating to the Funds of the Society and the "Carnegie Pension Fund" for the year 1915, and the condition of the various Funds as at December 31, 1915. The subscriptions, donations, and dues reported as received, and the income from investments, have been properly accounted for, and the securities and cash in bank and on hand at December 31, 1915, as shown in the accounts of the Funds presented herewith, have been duly checked and found in order.

Schedules "3" and "8-A" include expenditures amounting to \$1,633.84, \$17,833.00 and \$100.00 made through the Park Department of the City of New York, and amounts aggregating \$608.24 rescinded by the Board of Estimate and Apportionment of the City of New York, none of which has been verified by us, but we have incorporated them in the statements submitted, so that these may be complete.

MARWICK, MITCHELL, PEAT & Co.

Chartered Accountants.

79 Wall Street, New York,
February 19, 1916.

Report of the Auditing Committee
OF THE
NEW YORK ZOOLOGICAL SOCIETY

New York, March 6, 1916.

*To The President and Board of Managers
Of The New York Zoological Society:*

Dear Sirs:—

We beg to report we have examined the annual audit of the books and accounts of the New York Zoological Society for the year ending December 31, 1915, as made by Messrs. Marwick, Mitchell, Peat & Company, Chartered Accountants, and herewith submit the same to you as a complete and satisfactory audit of said books and accounts, including the Carnegie Pension Fund and the Pension Fund Income Account, all expenditures and receipts of the various accounts being clearly set forth, and it appearing that the cash on hand and at the various depositories has been verified and found correct, and all securities in which the funds of the Society are invested have been examined and found as reported.

Expenditures made through the Park Department of the City of New York have not been verified by this audit as such moneys have not passed through the hands of this Society, but are in due course checked and verified by the Comptroller of the City.

Respectfully submitted,

WILLIAM WHITE NILES,
Chairman.

LISPENARD STEWART,
H. CASIMIR DERHAM.

List of Accessions, 1915
BY THE ZOOLOGICAL SOCIETY
AT THE ZOOLOGICAL PARK.

BY GIFT.

- ADAMS, B. F., Jacksonville, Fla.:
Lubber Grasshoppers (17 specimens).
- ALLEN, BENJAMIN K., Saybrook, Conn.:
Bald Eagle.
- ANDRUSS, LEON M., Tarrytown, N. Y.:
Red Tailed Hawk.
- AUSTIN, E. H., Gaylordsville, Conn.:
Wood Tortoises (2 specimens).
- BACON, MRS., Millbrook, N. J.:
White Faced Sapajou Monkey.
- BAKER, MRS. W. H., New York City:
Black and Yellow Tegu.
- BALL, WILLIAM, New York City:
Alligator.
- BARNES, REV. OTIS T., Chappaqua, N. Y.:
Red Tailed Hawk.
- BASON, MRS. E., New York City:
Alligator.
- BAUMANN, CHARLES, New York City:
Hognosed Snake, Garter Snake.
- BECHTEL, W. A., New York City:
European Siskin.
- BELL, E. L., Flushing, N. Y.:
46 Garter Snakes, 8 DeKay Snakes, 12 Black Snakes, 9 Water Snakes, 2
Blowing Adders, 11 Ribbon Snakes, 122 Promethia Cocoons, 1 Painted
Turtle, 5 Rattlesnakes, 1 Snapping Turtle, 1 Ring Necked Snake, 2 Milk
Snakes, 6 Bag Worms, 102 Cecropia Cocoons, 39 Red Newts, 1 Slimy
Salamander, 1 Marbled Salamander. Total, 369 specimens.
- BENJAMIN, ERICK, New York City:
3 Pine Snakes, 1 Chicken Snake, 1 King Snake. Total, 5 specimens.
- BENNETT, MISS MABEL, New York City:
Raccoon.
- BIERSTADT, E. H., New York City:
Santo Domingo Amazon.
- BIRCHALL, MRS. F. T., New York City:
Indian Ring-Necked Parakeet.
- BITZER, OTTO G., New York City:
Alligator.
- BLACKMAN, MRS. O., East Orange, N. J.:
Raccoons (2 specimens).
- BOES, FRANK C., New York City:
Fence Swift.
- BOGART, CHARLES N., Binghamton, N. Y.:
Macaque Monkey.
- BORDEN, LETH A., Fall River, Mass.:
2 Fish Crows, 1 Red Shouldered Hawk.
- BOROUGH OF BELMAR, N. J.:
Mute Swans (2 specimens).
- BOWKER, MRS. A. F., New York City:
Mexican Couure.
- BRADY, WALTER, New York City:
Duck Owl.

BRAZIL, DR. VITAL, San Paulo, Brazil:

1 Brazilian Whip Snake, 2 Marssuxanas, 1 Brazilian Fer de Lance, 1 Flat-Necked Snake, 1 Neuwied's Lance Head, 1 Boulenger's Lance-Headed Snake, 1 Jararaca, 2 Lance-Heads, 2 South American Rattlesnakes. Total, 12 specimens.

BRICKNER, MRS. N., New York City:
Alligator.

BROCK, MRS. N., Mt. Vernon, N. Y.:
Alligator.

BROOKLYN INST. OF ARTS AND SCIENCES, Brooklyn, N. Y.:
Texas Armadillos (2 specimens).

BROWN, R. E., Brooklyn, N. Y.:
Yellow Naped Amazon.

BUCKSJAUM, F. H., New York City:
Parula Warbler.

BURKE, MISS BILLIE, New York City:
Mangabey Monkey.

BYONES, MRS. JOHN MACLAY, Paterson, N. J.:
Marmoset.

CAHALAN, ELIZABETH MAE ANNADALE, N. Y.:
Great Horned Owl.

CALLINN, JR., LOYD A., White Plains, N. Y.:
Alligators (2 specimens).

CALLISTER, J. H., Brooklyn, N. Y.:
American Bittern.

CAREY, WILLIAM, New York City:
American Merganser.

CARSON, MASTER ROBERT, Somerville, N. J.:
Kinajou.

CATTELL, OWEN, Garrison, N. Y.:
Raccoon, Skunk.

CHADWICK, M. J., New York City:
Canaries (2 specimens).

CHAPIN, MRS. E. N., New York City:
15 Canaries, 1 Strawberry Finch, 4 Grassfinches, 10 Zebra Finches, 1 Goldfinch, 1 Red-Billed Hill-Tit, 2 Green Singing Finches, 6 Cutthroat Finches, 2 Spice Mannikins, 1 Napoleon Weaver, 1 Chopfinch, 1 African Silver-Bill, 1 Madagascar Weaver, 1 Red-Billed Weaver, 1 Gray Java Sparrow, 1 Bengalee, 1 Linnet, 1 Golden-Breasted Bunting, 1 Niger Black-Headed Weaver, 1 Striped Masked Weaver. Total, 53 specimens.

CHAPMAN, MRS. E. F., New York City:
1 White Java Sparrow, 1 Undulated Grass Parakeet, 1 Green Grass Parakeet, 2 Strawberry Finches. Total, 5 specimens.

CHEESMAN, M. R., Murray, Utah:
Valley Quail (10 specimens).

CHILD, MISS R. A., New Canaan, Conn.:
Linnet.

CLARK, C. H., Yorktown Heights, N. Y.:
American Crows (3 specimens).

CLOSE, MRS. GEO. LYTTON, Mount Vernon, N. Y.:
Opossum.

COBB, MRS. E. C., New York City:
Alligator.

COLLINS, A. M., A. E. Collins Mfg. Co., Phila. (on behalf of the Day So. Am. Expedition):

3 Black Marmosets, 1 Common Marmoset, 1 Saki Monkey, 2 Black Capuchin Monkeys, 1 Pair of Red Coati Mundis, 1 Golden Agouti. Total, 10 specimens.

- CONSERVATION COMMISSION, Albany, N. Y.:
Northern Coon.
- CORNISH, C. D., New York City:
Raccoon.
- CORTEZ, MRS. J., Cornwall, N. J.:
Canary.
- CRON, RALPH EDWARD, New York City:
Raccoon.
- CUTTER, N. M., Port Lemon, Costa Rica:
3 Red Blue Macaws, 1 Yellow-Naped Amazon, 1 Yellow-Headed Amazon, 1
Yellow-Cheeked Amazon, 1 Globose Curassow. Total, 7 specimens.
- CZARNECKI, GABRIEL, New York City:
Kinkajou.
- DAY, LEE GARNETT, New York City (on behalf of Collins-Day South American
Expedition):
3 Black Marmosets, 1 Common Marmoset, 1 Saki Monkey, 2 Black Capuchin
Monkeys, 1 Pair Red Coati Mundis, 1 Golden Agouti. Total, 9 specimens.
- DENZLER, C., New York City:
Snapping Turtle.
- DEYERBERG, FRED, New York City:
Blue-Fronted Amazon Parrot.
- DIBANZA, MRS. MADDELENA, New York City:
Eastern Bobwhite.
- DOELGER, C. P., New York City:
American Egret.
- DOHRING, J. F., New York City:
Texas Armadillo.
- EHERNAUT, HARRY, New York City:
Alligator.
- EHRLMAN, J. G., New York City:
Canary.
- EISTER, F. H., Sorrento, Florida:
Lubber Grasshoppers (2 specimens).
- ENGELHARDT, G. P., Brooklyn, N. Y.:
Spade-Foot Toads (6 specimens).
- ERHARDT, MRS. W. H., New York City:
Red-Crested Cockatoo.
- EVANS, MISS M. C., New York City:
European Blackbird.
- EWALDT, JULIUS, New York City:
Golden Eagle.
- FERNANDEZ, MRS. C., New York City:
Box Turtle.
- FORD, MRS. H. S., New York City:
Yellow-Fronted Amazon.
- FRAMBACH, MRS. N., N. J.:
Alligators (2 specimens).
- FRANK H., New York City:
1 Painted Turtle, 1 Spotted Turtle.
- FRIDENBERG, CHARLES, New York City:
Gopher Tortoise.
- GALM, MASTER JOHN, New York City:
1 Milk Snake, 4 Garter Snakes, 13 DeKay Snakes. Total, 18 specimens.
- GARRISON, WILLIAM, New York City:
Barbary Turtle Dove.
- GERMUND, MORTON C., Freeport, L. I.:
Alligator.

- GILLAM, ARTHUR L., Flushing, L. I.:
 122 Promethia Cocoons, 102 Cecropia Cocoons, 6 Bag Worms, 4 DeKay
 Snakes, 35 Garter Snakes, 5 Rattlesnakes, 2 Ribbon Snakes, 6 Water
 Snakes, 10 Black Snakes, 1 Ring-Necked Snake, 2 Blowing Adders, 2
 Milk Snakes. Total, 297 specimens.
- GLUTH, WILLIAM A., New York City:
 Screech Owl.
- GOLDBERG, SAMUEL, New York City:
 Box Tortoise.
- GRAY, MISS E., New York City:
 Ring-Tailed Sapaïou.
- GRIFFS, MISS ALICE C., Spuyten Duïvil, N. Y.:
 Alligator.
- HARRINGTON, M. R., Bacaca, Cuba:
 Hutias (2 specimens).
- HAYES, MRS. E. H., New York City:
 Canary.
- HERBERT, MRS. EMMA L., New York City:
 1 Red-Billed Weaver, 1 Crimson Crowned Weaver.
- HEIGHWAY, DR. A. E., New York City:
 Box Tortoises (2 specimens).
- HIGGINS, DR., New York City:
 Hutia (Cuban Tree Rat).
- HILL, MISS AMELIA LEAVITT, New York City:
 Tovi Parakeets (2 specimens).
- HILL, JR., H. J., New York City:
 Alligator.
- HOBAN, W. C., New York City:
 Horned Toads (4 specimens).
- HODGES, FRANK, Olathe, Kansas:
 Coyotes (2 specimens).
- HOFFMAN, ALBERT L., Syosset, L. I.:
 Troupials (2 specimens).
- HOLMES, OTTO, New York City:
 Purple Gallinule.
- HOVEY, DR. E. O., New York City:
 Gila Monster.
- HULSE, RICHARD J. E., New York City:
 Golden Fronted Green Bulbul.
- INSULL, SAMUEL, Brooklyn, N. Y.:
 Hog-nosed Snakes (2 specimens).
- IRWIN, RICHARD, New York City:
 Alligator.
- JACK, JOHN M., Bradford, Pa.:
 Sapaïou Monkey.
- JACKOWITZ, JACOB, New York City:
 Fish Crow.
- JEFFREY, STEWART L., Yonkers, N. Y.:
 Porcupine.
- JENKINS, A. G., New York City:
 Squirrel Monkeys (2 specimens).
- JOHNSTON, MASTER EDWIN, New York City:
 Alligators (2 specimens).
- KEEZER, MASTER MAURICE, New York City:
 Bat.
- KELLER, MRS. WILLIAM, West Pittston, Pa.:
 Gray Fox.
- KENT, LEON P., New York City:
 Crow.

- KETCHAM, IRVING M., Glen Head, L. I.:
Marbled Salamander.
- KINCAID, H. GORDON, Boonton, N. J.:
13 Slimy Salamanders, 3 Red-Backed Salamanders, 3 Wood Frogs. Total,
19 specimens.
- KINTZ, MISS GERTRUDE N., Cresco, Pa.:
Pair Mallard Ducks.
- KISSAM, MRS. MAUDE, New York City:
20 Canaries, 2 Nestlings. Total, 22 specimens.
- KLINZING, GEORGE H., Danbury, Conn.:
Raccoons (2 specimens).
- KNAPP, CHARLES A., New York City:
Large Grub of Hercules Beetle.
- KNEZLK, ALBERT, New York City:
Snapping Turtle.
- KORI, MRS., New York City:
Purple Gallinule.
- KORTJOHN, MASTER MARTIN, New York City:
7 DeKay Snakes, 1 Common Garter Snake, 3 Garter Snakes. Total, 11
specimens.
- KUHN, MRS., New York City:
Box Turtle.
- LACHMUND, F. C., New York City:
Common Opossum.
- LARSEN, MISS MYRTLE, New York City:
White Rabbit.
- LAWSON, MRS. E., New York City:
Canary.
- LAWSON, MISS MARGAURITE, New York City:
Pair Marmosets.
- LEE, MASTER SHELDON S., New York City:
Alligator.
- LE FEVRE, H. SEWARD, Jamaica, N. Y.:
Mexican Deer.
- LEMPKE, OTTO, New York City:
Wood Cock.
- LEVNE, FERNANDO, New York City:
Milk Snake.
- LIETREER, LOUIS, New York City:
Box Turtle.
- LINCOLN ZOOLOGICAL PARK, through G. B. DeVry, Director, Chicago, Ill.:
2 Weasels, 2 Skunks.
- LOWETH, MASTERS RICHARD AND WILLIAM, New York City:
Spotted Turtles (8 specimens).
- LYONS, MASTER ALFRED, New York City:
White Rabbit.
- McCOURT, FRANK, Mount Vernon, N. Y.:
Black Snake.
- McILHENNY, E. A., Avery Island, La.:
Water Snakes (10 specimens).
- MACK'S BIRD EMPORIUM, New York City:
Opossum.
- MAGGIO, A., New York City:
Tarantula.
- MALMBORG, MASTER G. A., Yonkers, N. Y.:
Flying Squirrel.
- MARSH, MRS. THEODORE McCURDY, East Orange, N. J.:
Tovi Parakeets (2 specimens).

- MARTELL, CHARLES E., New York City:
Muskrat.
- MAYER, MASTER EUGENE, New York City:
1 Spotted Turtle, 1 Box Turtle.
- MEDLER, A. S., Bronxville, N. Y.:
Great Horned Owl.
- MEEKER, MISS CATHERINE, Maplewood, N. J.:
Cumberland Terrapin.
- MEYER, IRVING, New York City:
Black Crowned Night Heron.
- MEYN, MISS ELSIE, New York City:
Painted Turtle.
- MICHAEL, F. R., Dutch Kills, L. I.:
Mourning Dove.
- MILLS, VON STYCKEN, New York City:
Red Shouldered Hawk.
- MILLWARD, RUSSELL HASTINGS, New York City:
Gila Monsters (2 specimens).
- MITCHELL, MISS M., New York City:
Alligator.
- MOERICK, DR. E., Ward's Island, N. Y.:
Black Crowned Night Heron.
- MONTROSE, MRS. NYELLE, New York City:
Canary.
- MORGAN, C. W., Warwick, N. Y.:
Garter Snakes (20 specimens).
- MORRIS, C. H., McConnellsville, Ohio:
Great Horned Owl.
- MORRIS HIGH SCHOOL, Biology Department, New York City:
Leopold Snakes (27 specimens).
- MOULTON, MRS. ARTHUR JULIAN, New York City:
2 Peafowl, 2 Sulphur Crested Cockatoos.
- MURPHY, THOMAS J., New York City:
Painted Turtle.
- MURPHY, VERNON, New York City:
Alligator (2 specimens).
- MUSTARD, CAPT. E., New York City:
Alligators.
- NAEGELEN, JOE, New York City:
Central American Boa, Scorpion.
- NESMITH & CONSTANTINE, New York City:
South American Spider.
- NEVILLE, MISS ANITA, Somerville, N. J.:
Alligator.
- NEWMAN, JOHN L., New York City:
Yellow-Naped Amazon Parrot.
- NEW YORK QUERBRACHO EXTRACT COMPANY, Brooklyn, N. Y.:
Black Tegus.
- NICHOLAS, FRANCIS, Tucson, Arizona:
Gopher Rats (6 specimens).
- NICHOLLS, MRS. R. W., New York City:
Alligator.
- NORMAN, EDWIN, New York City:
Screech Owls (2 specimens).
- NORTON, ELIOT, New York City:
6 White Rats, European Goldfinch.
- PERSINA, GEO. J., Evansville, Ind.:
Monkey-faced Owl.

- POLLOCK, G. F., Skyland, Va.:
Timber Rattlesnake.
- POMEL, RAYMOND J., Bayonne, N. J.:
Alligator.
- POTTER, MRS. A. I., New York City:
White Java Sparrows (2 specimens).
- PYNE, MRS. MOSES TAYLOR, Princeton, N. J.:
Rhesus Monkey.
- REIGER, MASTER HERBERT, New York City:
Wood Turtle.
- RICKARD, G. L., New York City:
Glow Worm.
- ROE, C. M., Roseville, N. J.:
Duck Hawk.
- ROELKER, H. R., Port Orange, Fla.:
Coral Snake.
- ROMANOFF, PETER, New York City:
Raccoons (2 specimens).
- ROOSA, HARVEY, E., New York City:
Gray Wolf.
- ROUSEY, E., Coney Island, N. Y.:
Horned Toads (10 specimens).
- RUPPERT, JACOB, New York City:
Wood Ducks (3 specimens).
- RUSSELL, RICHARD H., Mt. Holly Spring, Pa.:
1 Timber Rattlesnake, 1 Copperhead Snake, 1 Milk Snake.
- SCHEEL, CHARLES A., New York City:
Alligator.
- SCHEUBNER, MISS FRIDA, Tompkinsville, S. I.:
Yellow Fronted Amazon.
- SCHULYE, MISS IDA E., Bronxwood Park, N. Y.:
Crow.
- SEIDER, LUDWIG, Colchester, Conn.:
Screech Owl.
- SENS, A., Irvington, N. Y.:
American Sparrow Hawk.
- SHIPMAN, MISS LYLE, Los Angeles, Cal.:
Horned Lizard.
- SIMON, C., New York City:
American Sparrow Hawk.
- SINCLAIR, H. N., New York City:
Alligator.
- SKINNER, E. D., Tarrytown, N. Y.:
Virginia White-Tailed Deer.
- SMITH, GEORGE A., Norwalk, Conn.:
Alligator.
- SMITH, HENRY B., New York City:
1 Diamond Backed Turtle, 1 Cumberland Turtle.
- SMITH, MRS. J. M., New York City:
Blue-Fronted Amazon Parrot.
- SNYDER, MASTER HENRY, Scarsdale, N. Y.:
Albino Pond Frog.
- SNYDER, M., Bloomfield, N. J.:
2 Garter Snakes, 1 Water Snake.
- SOMMERMEYER, OSCAR A., Passaic, N. J.:
Sharp Shinned Hawk.

SPECK, DR. FRANK, Phila., Pa.:

36 Slimy Salamanders, 6 Dusky Salamanders, 1 Red Salamander, 4 Two Lined Salamanders, 2 Mountain Salamanders, 2 Red-Backed Salamanders, 1 Four-Toed Salamander, 1 Box Sheltopusick, 2 Pickering Tree Toads, 1 Garter Snake, 1 Black Snake, 1 Green Snake, 1 Ribbon Snake, 1 Water Snake, 1 Milk Snake, 1 DeKay Snake, 1 Box Tortoise, 1 Fence Swift, 1 Anolis, 1 Newt. Total, 66 specimens.

SPINDLER, J., New York City:

Saw-Whet Owl.

SPOFFORD, MRS. C. A., Norfolk, Conn.:

Hybrid Pheasants (2 specimens).

STACY, MR., 1st Officer S. S. *Mohawk*, care of Clyde S. S. Co., New York City:
Yellow-Billed Cuckoo.

STAY, GUY ELLSWORTH, New York City:

Tegu.

STEINER BROS., JOS., New York City:

Opossum.

STEINHAUS, MRS. S. M., New York City:

Red-Billed Parrot.

STEVENSON, MISS MURIEL, Brooklyn, N. Y.:

Painted Turtle.

STONE, ALAN, Falls Village, Conn.:

Painted Turtle.

STOUSLAND, MISS GRACE A., Rutherford, N. J.:

Purple Gallinule.

STRYKER, ROBERT S., Jefferson, N. Y.:

Red-Shouldered Hawk.

SWENSON, HAROLD, New York City:

Milk Snake.

SWIFT, T. R., Mt. Vernon, N. Y.:

Purple Gallinule.

TARBOX, MISS CORA I., Essex Junction, Vt.:

Robin.

TAYLOR, LES. G., New York City:

Water Snake.

TEVIS, LANSING S., San Francisco, Cal.:

Gila Monsters (2 specimens).

THOMSON, MRS. A. E., Rutherford, N. J.:

Alligator.

TOTH, GASPAB, Brooklyn, N. Y.:

Spotted Sandpiper.

URBACH, WILLIAM, New York City:

Screech Owl.

VEIT, DR. T., Brooklyn, N. Y.:

American Green Tree Snake.

VON BUEHREN, GEORGE, New York City:

Hog-nosed Snake.

WALTZ, A. J., New York City:

Alligator.

WARD, W. A., Port Chester, N. Y.:

Pair Rabbits.

WASHBURN, R. G., Jersey City, N. J.:

Alligators (2 specimens).

WATSON, MISS SARA J., Rutherford, N. J.:

Alligator.

WEINBERG, J., San Francisco, Cal.:

12 Gopher Rats, 12 Trap Deer Spiders, 19 Hyla Regyla, 2 Pacific Rattlesnakes, 6 Drayton Frogs, 1 Red Rattlesnake, 25 Swifts, 13 Horned Toads, 2 Scorpions, 6 Geerhnotus, 4 Crickets, 5 Cal. Toads, 6 Worm Salamanders, 5 Mice, 7 Boyle's King Snakes, 2 Arizona King Snakes, 2 Red Coachwhip Snakes, 5 Pacific Garter Snakes, 1 Water Snake, 1 Striped Racer, 1 Western Garter Snake, 2 Ring-Necked Snakes. Total, 139 specimens.

WEISS, Miss CAROL, New York City:
Alligator.

WENZEL, Sr., E., New York City:

1 Milk Snake, Spotted Turtle, 2 Wood Tortoises, Copperhead Snake.

WEST, N. E., New York City:
Sair-Whet Owl.

WESTCOTT, Mrs. DAVID, Jersey City, N. J.:
White Rat.

WILLIAMSON, Mrs. J. D., New York City:
Pair Ocelots.

WOOD, J. WALTER, New York City:
Great Blue Heron.

WORTHINGTON, C. C., Shawnee-on-Delaware, Pa.:

3 Orange Weavers, 6 Baltimore Orioles, 3 Black-Headed Weavers, 2 Orchard Orioles, 2 Zebra Finches, 1 White-Crowned Sparrow, 1 White-Headed Jay Thrush, 1 White-Throat Sparrow, 1 European Jay, 8 Song Sparrows, 1 European Starling, 2 Chipping Sparrows, 2 Red-Crested Cardinals, 2 Fox Sparrows, 1 Himalayan Whistling Thrush, 1 American Magpie, 2 Lesson Mexican Motmots, 3 Tree Sparrows, 1 Madagascar Weaver, 5 Juncos, 1 Three-Colored Mannikin, 2 White-Bellied Nuthatches, 1 Napoleon Weaver, 2 Indigo Buntings, 1 Long-Tailed Mamaqua Dove, 1 Chickadee, 2 Bonham Rock Partridges, 4 Rose-Breasted Grosbeak, 2 Bald Eagles, 1 Black-Headed Grosbeak, 3 Purple Grackles, 2 Arctic Towhees, 5 Red-Winged Blackbirds, 5 American Goldfinches, 2 Crowbirds, 2 Scarlet Tanagers, 1 Woodhouse Jay, 1 Yellow-Breasted Chat, 1 Meadowlark, 1 Phoebe, 11 Cedar Waxwings, 3 Robins, 1 Robin Song Thrush Hybrid, 2 Catbirds, 2 Wood Thrushes, 3 Canaries, 1 Brown Thrasher, 16 Barbary Turtle Doves, 1 Prairie Horned Lark, 10 Mourning Doves, 2 Bluebirds, 2 Mourning Dove Turtle Hybrids, 1 Blue-Fronted Amazon Parrot. Total, 143 specimens.

WULFSOHN, Max, New York City:
1 Opossum, 1 Raccoon.

YOUNG, Miss MILDRED, New Rochelle, N. Y.:
Prairie "Dog."

Plants

BY GIFT.

BROWN, Mrs. PETER, Southampton, N. Y.:
Kentia Belmoreana (2 specimens).

BUCKOW, OTTO, New York City:
Rubber Plant.

SCHNAUFER, JOHN H., New York City:

12 Aspidistras, 12 Curculigo, 10 Calla Lillies, 2 Davallia Ferns, 1 Stanhopea Orchid. Total, 37 specimens.

National Collection of Heads and Horns

BY GIFT.

DAVIDSON, J. I., Lockport, N. Y.:

White-Tailed Deer (*Odocoileus virginianus*). Freak Antlers.

- DICKERMAN, WATSON B., Mamaroneck, N. Y.:
 Tibetan Argali (*Ovis hodgsoni*). Mounted Head.
 EAGLE, JOHN H., New York City, and others:
 Himalayan Ibex (*Capra ibex*). Mounted Head.
 HARRISON, ARCHIBALD, Washington, D. C.:
 Tamarou (Philippine Buffalo) (*Bubalis mindorensis*). Mounted Head.
 HARRISON, HON. FRANCIS BURTON, Manila, P. I.:
 Philippine Caraboa (*Bos indicus*). Horns.
 PHILLIPS, DR. JOHN C., Wenham, Mass.:
 Arabian Ibex (*Capra nubiana sinaitica*). Skull and Horns.
 POTTER, WILSON, Philadelphia, Pa.:
 Black Mountain Sheep (*Ovis stonei*). Head Skin and Mounting.

BY PURCHASE.

- Southern White Rhinoceros (*Rhinoceros simus*). Front Horn.
 Uganda Giraffe (*Giraffa rothschildi*). Mounted Head.

Gallery of Paintings

BY GIFT.

- "A FRIEND":
 Bronze Bust of Gorilla, "Dinah," executed by Miss Eugenie Shonnard.
 THOMPSON, MRS. FREDERICK FERRIS, New York City:
 Oil Painting, "Portrait of a Lioness," by Rosa Bonheur, size 31 x 37 inches.

Wild Life Protection

- U. S. GOVERNMENT (through the Collector of the Port of San Francisco):
 For exhibition purposes, 1046 specimens from Japan, China, India and other portions of the Orient, including egrets, and the feathers, wings, tails and entire skins of birds used for millinery purposes. Seized at the San Francisco Custom House.

AT THE AQUARIUM.

BY GIFT.

- AMENT, MR. SAMUEL, New York City:
 Snapping Turtle.
 AMERICAN LOBSTER DISTRIBUTING Co., New York City:
 Lobster.
 BERGER, MISS VICTORIA, New York City:
 Goldfish (2 specimens).
 BESLEGE, MR. H., Brooklyn, N. Y.:
 Alligator.
 BISHOP, MR. FREDERICK, New York City:
 Mounted specimen of Blackfish.
 BOIGEL, MR., Canarsie, L. I.:
 Moonfish.
 BRENNIS, HON. HENRY, Cardenas, Cuba:
 Giant specimen of sponge.
 BRUCE, MR. E. K., Thornburg, Iowa:
 Fancy Goldfish (12 specimens).
 CHILDREN'S MUSEUM, Brooklyn, N. Y.:
 Alligator, Cumberland Turtle, 2 Bull Frogs.
 CLIFFORD, MR. M. J., New York City:
 Snapping Turtle.

- CONNELLY, MR. F. J., Brooklyn, N. Y.:
Mud Turtle.
- DALE, MR. J. M., Brooklyn, N. Y.:
Alligator (2 specimens).
- DARTCH, MR. GEORGE C., New York City:
Wood Turtle.
- DAWLEY, MR. ROBERT W., Passaic, N. J.:
Miller's Thumb (6 specimens).
- DELMARLE, MASTER PERRY, Brooklyn, N. Y.:
Painted Turtle (2 specimens).
- DIEHL, MR. GEORGE, JR., New York City:
Wood Turtle, Painted Turtle.
- ERB, MR. VINCENT, Staten Island, N. Y.:
Green Turtle.
- GEORGE, MR. ARTHUR E., New York City:
Water Toad.
- GOTTSLEBEN, MR. EMIL, Nassau, Bahamas:
Hawksbill Turtle.
- GREEMAN, MR. E., New York City:
Amazon Turtle.
- HANSEN, MASTER MORTEN, Jersey City, N. J.:
Painted Turtle.
- HOLLINS, MR. G. V., Islip, Long Island, N. Y.:
Diamondback Terrapin (2 specimens).
- KELLER, MASTER EDWARD, Brooklyn, N. Y.:
Alligator.
- KESICK, MR., New York City:
Alligator.
- KETCHAM, MR. IRVING M., Glenhead, Long Island, N. Y.:
3 Bull Frogs, 27 Salamanders, 13 Crayfish. Total 43 specimens.
- KIESSET, MR. J. R., New York City:
Alligator.
- KING, MR. A. M., Loomis, N. Y.:
Alligator.
- KING, MR. B. W., New York City:
Spotted Turtle.
- KNAPP, MR. WARD, Yonkers, N. Y.:
Orange Filefish.
- KONDROP, MR. M. E., Jersey City, N. J.:
Fresh-water Mussel (4 specimens).
- KRAMER BROTHERS, New York City:
Snapping Turtle.
- KROLMAN, MR. EDWIN V., Astoria, Long Island, N. Y.:
Snapping Turtle.
- LAMBSON, MR. G. H., Baird, California:
7 Yellow-bellied Salamanders, 5 Brown Salamanders.
- LAPAM, MISS ADELAIDE, New York City:
Box Turtle.
- LAUPPE, MR. C., New York City:
Mud Puppy.
- MARIE, MR. CHARLES H., New York City:
Quantity of Yellow Perch Eggs.
- MARSH, MR. O. F., Brooklyn, N. Y.:
Loggerhead Turtle.
- MAULENHIOFF, MR. F. C., New York City:
Sumatra Fishes (6 specimens, 5 varieties).
- McKNIGHT, MASTER R. S., New York City:
Alligator.

- MEIZELL, MRS. HARRY, New York City:
Alligator (3 specimens).
- MEMIFOLD, MR. JOSEPH, New York City:
Reeves Terrapin.
- MORGAN, MR. C. W., New York City:
13 Painted Turtles, 6 Wood Turtles, 1 Snapping Turtle, 2 Musk Turtles.
Total, 22 specimens.
- MULDER, MR. R., New York City:
Eel.
- MULLER, MR. FRED, New York City:
Box Turtle.
- NEAVES, MR. EDWARD D., Brooklyn, N. Y.:
Slider Turtle, Cumberland Turtle.
- NEISBURY, MR. LEO, Brooklyn, N. Y.:
Snapping Turtle.
- NEW JERSEY FISH COMMISSION (through Hon. E. Napier, Commissioner), Trenton, N. J. :
15 Large-Mouth Black Bass, 4 Small-Mouth Black Bass, 3 Calico Bass, 7 Pickerel, 31 Yellow Perch, 29 Sunfish, 5 Brook Trout, 3 Rainbow Trout, 16 Brown Trout, 26 Landlocked Salmon. Total, 139 specimens.
- NEW YORK GLOBE, New York City:
1 Skate, 2 Winter Flounders, 3 Dogfish, 1 Angler, 10 Sea Scallops, 4 Mud Star Fish, 2 Mussels, 2 Hermit Crabs, 2 Sea Cucumbers, 1 Whelk, 1 Natica, 1 Conch, Lot of Barnacles. Total, 30 specimens.
- NYE, MR. JOSEPH K., New Bedford, Mass.
Porpoise (8 specimens).
- OTTS, MR. WILLIAM, New York City:
Alligator (2 specimens).
- PARADISE BROOK TROUT HATCHERY, Parkside, Pa.:
Brook Trout (26 specimens).
- PASCO, MR. S. N., New York City:
Goldfish.
- PECK SLIP FISH CO., New York City:
Soft-shell Turtle.
- PEDERSEN, MR. ARLING, Jersey City, N. J.:
Alligator.
- RAUHAUSER, MR. LOUIS, New York City:
Painted Turtle (3 specimens).
- ROONEY, MR. JAMES, New York City:
Painted Turtle.
- ROSENBAUM, MR. SAMUEL, Brooklyn, N. Y.:
Snapping Turtle.
- ROSS, MR. C. J., Liverpool, England:
Crocodile.
- RUTHERFORD, MR. THOMAS W., Brooklyn, N. Y.:
Alligator (2 specimens).
- SCHOTTSMANN, MR. FREDERICK, Brooklyn, N. Y.:
Green Turtle.
- SHURTLEFF, MRS. R. M., New York City:
2 Aquaria and Miscellaneous aquarium implements.
- SNYLER, MR. ADOLPHE E., Brooklyn, N. Y.:
Snapping Turtle.
- SOUTH SIDE SPORTSMEN'S CLUB (through Mr. George P. Slade, President), Oakdale, Long Island, N. Y.:
Rainbow Trout (22 specimens).
- STARMER, MR. WILLIAM AUSTIN, New York City:
Golden Orfe.
- STEVENS, MR. CHARLES, Brooklyn, N. Y.:
Catfish.

- SWATRIDGE, MR. W. O., Brooklyn, N. Y.:
Penguin.
- TRIEBSWETTER, MISS AMELIA, Astoria, Long Island, N. Y.:
Alligator.
- TROST, MR. A., New York City:
Bull Frog.
- U. S. BUREAU OF FISHERIES, Washington, D. C.:
1,000,000 Whitefish Eggs, 5,000 Brook Trout Eggs, 1,000 Land-locked Salmon Eggs, 1,000,000 Yellow Perch Eggs, 500,000 Pike Perch Eggs, 25,000 Black-spotted Trout Eggs. Total number of Fish Eggs received, 2,531,000. 1 Hair Seal, 67 Brook Trout.
- WHITE, MR. I. G., New York City:
Alligator.
- WILLIAMS, MISS EDNA, Brooklyn, N. Y.:
Seahorse (2 specimens).
- WILSON, MR. P. A., Staten Island, N. Y.:
Spiny Boxfish.
- WOLF, MR. FRANK, Staten Island, N. Y.:
Snapping Turtle.
- WORK, MR. JOHN P., Brooklyn, N. Y.:
Green Turtle.
- WOS, MRS. JENNIE, New York City:
Cumberland Turtle.
- YOUNG, CAPTAIN CARL C., New York City:
Rock Crab, 2 Large Lobsters.
- YOUNG, MR. FRANK C., Wantagh, Long Island, N. Y.:
Alligator.

BY EXCHANGE.

- BRIND, MR. W. L., New York City:
2 *Acara bimaculata*, 2 *Cichlasoma cyanoguttata*.
- BROWN, MR. E. C., Copake, New York:
Pickerel (12 specimens).
- FAIRMONT PARK AQUARIUM, Philadelphia, Pa.:
51 Suckers, 6 Large-mouth Black Bass, 15 Catfish, 91 Calico Bass, 5 Brook Trout.
- FAIRMONT PARK AQUARIUM AND BOSTON AQUARIUM:
2 Nassau Groupers, 6 Dog Snappers, 5 Gray Snappers, 11 Blue-striped Grunts, 5 Yellow Grunts, 11 White Grunts, 4 Muttonfishes, 4 Scamp, 2 Ocean Triggerfishes, 1 Queen Triggerfish, 3 Common Triggerfishes, 2 Red Groupers, 2 Yellow-finned Groupers, 2 Black Groupers, 2 Sea Catfishes, 12 Black Angelfishes, 8 Blue Angelfishes, 1 Spadefish, 2 Margatefishes, 2 Green Morays, 1 Porgy, 30 Porkfishes, 1 Runner, 2 Shark Suckers, 2 Red Hinds, 3 Rock Hinds, 1 Graysby, 10 Rainbow Parrotfishes, 2 Chubb, 8 Schoolmasters, 8 Spot Snappers, 3 Bream, 2 Yellow Tails, 2 Red Hogfishes, 3 Squirrelfishes, 2 Tom Tates, 1 Southern Puffer, 1 Blue Parrotfish, 1 Butterflyfish, 4 Sergeant Majors, 12 Beau Gregory, 2 Jewfishes, 1 Cowfish, 2 Trunkfishes, 4 Spiny Lobsters, 4 Stone Crabs, 6 Gray Grunts.
- JACOBS, MR. A., New York City:
Girardinus guppyi (6 specimens).
- LLOYD, MR. C., Brooklyn, N. Y.:
Haplochilus latipes (20 specimens).
- NEW YORK CONSERVATION COMMISSION, Cold Spring Harbor, Long Island, N. Y.:
Rainbow Trout (36 specimens).
- SUMNER, MR. F. N., Elizabeth, N. J.:
Pickerel (4 specimens).
- WATTELL, MR. JULES, New York City:
Paradisefish (3 specimens).

The Aquarium Library

BY GIFT.

- AMERICAN MUSEUM OF NATURAL HISTORY, New York City:
Annual Report and Journal.
- BROOKLYN INSTITUTE OF ARTS AND SCIENCES, Brooklyn, N. Y.:
Annual Report, *Museum News* and Quarterly.
- CARNEGIE INSTITUTION OF WASHINGTON, Washington, D. C.:
Special Papers.
- CHILDREN'S MUSEUM, Bedford Park, Brooklyn, N. Y.:
Bulletin for 1915.
- ILLINOIS STATE LABORATORY OF NATURAL HISTORY, Urbana, Ill.:
Publications for 1915.
- JENNINGS, MR. C. E., New York City:
Fishing Gazette.
- LOUISIANA CONSERVATION COMMISSION, New Orleans, La.:
Report 1912-14.
- MINNESOTA GAME AND FISH COMMISSION, St. Paul, Minn.:
Bulletin.
- MONTANA GAME AND FISH COMMISSION, Helena, Mont.:
1st Biennial Report, 1913-14.
- NATIONAL MUSEUM, Washington, D. C.:
Bulletin for 1915.
- NEW YORK CONSERVATION COMMISSION, Albany, N. Y.:
Report of State Fish Culturist.
- PENNSYLVANIA DEPARTMENT OF FISHERIES, Harrisburg, Pa.:
Report 1913-14.
- SMITHSONIAN INSTITUTION, Washington, D. C.:
Special Papers for 1915.
- U. S. BUREAU OF FISHERIES, Washington, D. C.:
Report and Bulletin for 1915.
- VIRGINIA COMMISSION OF FISHERIES, Richmond, Virginia:
Report 1913-14.
- WINGATE, MR. HAROLD, New York City:
Proceedings of the Philadelphia Academy of Natural Sciences.

CHARTER
OF THE
NEW YORK ZOOLOGICAL SOCIETY

CHAPTER 435, LAWS OF 1895.

AN ACT to incorporate the New York Zoological Society and to provide for the establishment of a zoological garden in the city of New York.
As amended by Chapter 146 of the Laws of 1902; and by Chapter 240 of the Laws of 1910.

See Chapter 432 of the Laws of 1900.

See Chapter of the City of New York, Section 626 of the Laws of 1901.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. Charles A. Dana, Oswald Ottendorfer, Andrew H. Green, William H. Webb, Henry H. Cook, Samuel D. Babcock, Charles R. Miller, George G. Haven, J. Hampden Robb, Frederick W. DeVoe, J. Seaver Page, Rush C. Hawkins, David James King, Wager Swayne, Charles A. Peabody, Jr., Charles E. Whitehead, Charles R. Flint, Samuel Parsons, Jr., Mornay Williams, Henry E. Gregory, Isaac W. Maclay, Isaac Rosenwald, Hugh N. Camp, Andrew D. Parker, Cornelius Van Cott, William F. Havemeyer, Frederick Shonnard, William W. Thompson, Alexander Hadden, Edward L. Owen, John H. Starin, Rush S. Huidekoper, William W. Goodrich, Albert H. Gallatin, Frederick S. Church, Edward C. Spitzka, Robert L. Niles, Madison Grant, C. Grant La Farge, William Van Valkenburg, and such other persons as may, under the provisions of its by-laws, become members of the corporation hereby created, are hereby created a body corporate and politic, by and under the name of the New York Zoological Society.

SEC. 2. Said corporation shall have power to establish, maintain and control zoological parks, gardens, or other collections for the promotion of zoology and kindred subjects, and for the instruction and recreation of the people. Said corporation may collect, hold, and expend funds for zoological research and publication, for the protection of wild animal life, and for kindred purposes, and may promote, form, and co-operate with other associations with similar purposes, and may purchase, sell, or exchange animals, plants, and specimens appropriate to the objects for which it was created.

SEC. 3. The managers of said corporation shall have power to make and adopt by-laws for the management and government of its affairs and business, for the admission, suspension, and expulsion of its members, and for the terms and conditions of membership; to prescribe the number and mode of election of its officers; to define their duties; to provide for the safe-keeping of its property, and from time to time to alter and modify its by-laws.

SEC. 4. The affairs and business of said corporation shall be managed and controlled by a board of managers, the number of whom shall be prescribed by the by-laws. The first board of managers shall be divided by lot into three classes, equal in number, one of which classes shall hold office for one year, another for two years, and the other for three years; and all persons elected to be managers at any subsequent election shall hold office for three years, and until others are elected in their stead. There shall be a president, two vice-presidents, treasurer and secretary, to be elected by the board of managers annually, who shall hold office until others are elected in their stead. The first meeting under

this act may be held at any time upon a notice of five days, signed by any five of the incorporators named in the first section of this act, fixing a time and place for such meeting, a copy whereof shall be mailed to each of said incorporators at his usual post-office address, and twelve of such incorporators shall be a quorum for the purpose of organization, adoption of by-laws, and election of officers. No manager of said corporation shall be interested, directly or indirectly, in any contract concerning its property or affairs.

SEC. 5. Said corporation may raise money by the issue of bonds, secured by a mortgage on any or all of its property not acquired from said city or state.

SEC. 6. Said corporation may take, purchase, and hold real and personal estate necessary for the purpose of its incorporation, and shall possess the general powers and be subject to the restrictions and liabilities prescribed in Article II of Chapter 23 of the Consolidated Laws entitled "General Corporation Law," being chapter 28 of the Laws of 1909.

SEC. 7. The commissioners of the sinking fund of the said city are authorized in their discretion to allot, set apart, and appropriate for the use of said corporation, any of the lands belonging to said city north of One Hundred and Fifty-fifth street, but not in the Central Park, and such appropriation may be revoked if, after the expiration of five years from the passage of the act, a zoological garden is not established thereon; said grounds thus set apart and appropriated shall be used for no purpose whatsoever except those aforesaid. As soon as any lands are set apart the Mayor of the said city of New York, and the President of the Department of Parks of said city, shall become and be *ex-officio* members of the board of managers of said corporation. If at any time the animals now composing the menagerie at Central Park shall be removed therefrom by the authorities having charge thereof, said authorities may make an arrangement with the incorporators named in this act or the corporation formed by them for leasing or sale of such animals to such incorporators or corporation, and said incorporators or corporation shall have a preference over any other person or corporation in respect thereto upon the same terms which said authorities could make with any such other person or corporation, or upon such other terms as to such authorities may seem proper, but nothing herein provided shall be construed as giving the commissioners of the Department of Public Parks authority to sell, lease, transfer, or in any other wise dispose of said animals or other property connected with or belonging to said menagerie.

SEC. 8. Admission to the said gardens shall be free to the public for at least four days, one of which shall be Sunday, in each week, subject to such rules and regulations as shall be prescribed by said corporation.

SEC. 9. This act shall take effect immediately.

NEW YORK ZOOLOGICAL SOCIETY

AND THE

NEW YORK AQUARIUM

CHAPTER 441. LAWS OF 1902.

AN ACT to authorize a further appropriation to the New York Zoological Society for the support of the New York Aquarium.

As amended by Chapter 239 of the Laws of 1910.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Chapter four hundred and forty-one of the laws of nineteen hundred and two, entitled "An act to authorize a further appropriation to the New York Zoological Society for the support of the New York Aquarium," is hereby amended to read as follows:

SECTION 1. The Board of Estimate and Apportionment of the City of New York may annually, in its discretion, include in the budget for the then next ensuing financial year, in addition to any sum or sums which may be appropriated for the adequate support and maintenance of the New York Zoological Park or gardens, situated in the borough of the Bronx, and administered and controlled by the New York Zoological Society, a further sum or sums, in its discretion, for the use of the said New York Zoological Society, provided, however, that the additional appropriation hereby authorized shall be made only in case an agreement is entered into between the said New York Zoological Society and the City of New York, acting by its Board of Estimate and Apportionment for the adequate keeping, maintenance, extension, preservation and exhibition of the building and approaches thereto and collection of aquatic animals and plants contained therein, known as the New York Aquarium, situated in the Battery park in the Borough of Manhattan in said city, and also for furnishing opportunities for study, research and publication in connection with said collections, which contract the said Board of Estimate and Apportionment is hereby expressly authorized, in its discretion, to make upon such terms and conditions as may be agreed upon with the said New York Zoological Society, and which contract shall also provide how the duty of the commissioner of parks for the boroughs of Manhattan and Richmond in respect to maintaining the said aquarium now imposed upon him by law shall be performed.

SEC. 2. This act shall take effect immediately.

BY-LAWS
OF THE
NEW YORK ZOOLOGICAL SOCIETY

AMENDED TO JANUARY 21, 1914.

ARTICLE I.

MEETINGS OF THE SOCIETY.

SECTION 1. The office and place of business of the New York Zoological Society shall be in the City of New York, unless otherwise ordered.

SEC. 2. The Society shall hold its annual meeting for the election of Managers, and other business, on the second Tuesday of January, or such day thereafter during the month of January to which said annual meeting shall adjourn.

SEC. 3. Special meetings of the Society shall be called by the Secretary, upon the request of the President or the Chairman of the Executive Committee, or at the written request of ten members.

SEC. 4. Notices of all meetings shall be mailed to each member of the Society at least three days before such meeting.

SEC. 5. At meetings of the Society twenty members shall constitute a quorum.

SEC. 6. The order of business shall be as follows:

1. Roll Call.
2. Reading of minutes not previously read.
3. Report of Executive Committee.
4. Report of Secretary.
5. Report of Treasurer.
6. Report of the Director of the Zoological Park.
7. Report of Director of the Aquarium.
8. Election of Managers.
9. Communications.
10. Miscellaneous business.
11. Reports and resolutions.

ARTICLE II.

BOARD OF MANAGERS.

SEC. 1. The Board of Managers shall consist of thirty-six members, together with the Mayor of New York and President of the Park Board, or Commissioner for the Bronx, who shall be members *ex-officio* of the Board.

SEC. 2. Nineteen Managers shall constitute a quorum, but ten Managers may transact current business, and adjourn, subject to the subsequent approval of a meeting at which a quorum shall be present.

SEC. 3. The Board of Managers shall hold an annual meeting on the third Tuesday of January, or on such day thereafter to which said annual meeting shall adjourn. Regular meetings of the Board may also be called by the Secretary on the third Tuesdays of October and April upon the request of the President or Chairman of the Executive Committee. Special meetings of the Board shall be called at any time by the Secretary upon the request of the President or Chairman of the Executive Committee, or at the written request of five Managers.

SEC. 4. Notices of meetings of the Board shall be mailed to each Manager at least three days before such meetings.

SEC. 5. The successors to the outgoing class of Managers shall be elected by the Society at its annual meeting, but vacancies in the board may be filled for the unexpired term by the Board of Managers, or by the Executive Committee.

SEC. 6. A Nominating Committee shall be annually appointed by the Executive Committee, and shall consist of three members of the Society at large, who shall nominate and post ten days before the annual election the names of twelve persons to succeed the outgoing class of Managers in a conspicuous place in the office of the Society.

SEC. 7. No person shall be eligible for the election to the Board of Managers, except to fill vacancies, unless his name shall have been posted as a candidate by such committee, or by not less than ten members, in writing, in a conspicuous place in the office of the Society ten days before the annual election. All candidates for election as Managers must be Life Members, Patrons, Associate Founders, or Founders of the Society.

SEC. 8. Any Manager who shall fail to attend three consecutive meetings of the Board, unless excused by a vote of the Board, shall cease to be a Manager.

SEC. 9. The Board of Managers shall at its annual meeting elect a President, two Vice-Presidents, a Secretary, and Treasurer, who shall hold office for one year, or until their successors are elected. The President, Vice-Presidents, and Treasurer shall be members of the Board.

SEC. 10. The Director of the Zoological Park, the Director of the Aquarium, and all other persons employed by the Society, shall be appointed by the Board or by the Executive Committee, and shall hold office during the pleasure of the Board.

SEC. 11. The Board shall, at its annual meeting, elect an Executive Committee and Auditing Committee, which shall hold office for one year, or until their successors are elected. The Board of Managers and the Executive Committee shall also have authority to appoint such other Committees or officers as they may at any time deem desirable, and to delegate to them such powers as may be necessary.

SEC. 12. The order of business of the meetings of the Board shall be as follows:

1. Roll Call.
2. Reading of minutes not previously read.
3. Report of Executive Committee.
4. Report of Secretary.
5. Report of Treasurer.
6. Report of Auditing Committee.
7. Report of Director of Zoological Park.
8. Report of the Director of the Aquarium.
9. Election of Officers.
10. Election of Committees.
11. Election of new members.
12. Communications.
13. Miscellaneous business.

SEC. 13. All reports and resolutions shall be in writing, and the ayes and nays may be called on any resolution at the request of one Manager.

SEC. 14. Whenever the funds of the Society shall permit, the Board of Managers or the Executive Committee may award medals or other prizes for meritorious work connected with the objects of the Society.

ARTICLE III.

OFFICERS.

SEC. 1. The officers of the Society shall consist of a President, two Vice-Presidents, a Treasurer, a Secretary, and a Director of the Zoological Park. These Officers, with the exception of the Director, shall be elected at the annual meeting of the Board of Managers, but any vacancy may be filled for an unexpired term by the Board of Managers, or by the Executive Committee, until the next annual election.

SEC. 2. The President shall preside at all meetings of the Board and of the Society, and shall be *ex-officio* a member of the Executive and Auditing Committees.

SEC. 3. The Vice-Presidents shall, in the absence of the President, perform his duties and possess his powers, acting in the order of their election.

SEC. 4. The Treasurer shall receive, collect and hold, subject to the order of the Board of Managers, or the Executive Committee, all dues, subscriptions, warrants from the City, fees and securities. He shall pay all bills as ordered by the Board of Managers or the Executive Committee, and shall report to the Society at its annual meeting, and to the Board of Managers at all regular meetings, and to the Executive Committee at each meeting. He shall keep all moneys and securities in some bank or trust company to be approved by the Board of Managers or Executive Committee. The books of the Society shall at all times be open to the inspection of the Managers.

SEC. 5. The Secretary shall be a salaried officer of the Society. He shall be present, unless otherwise relieved by the Board or Executive Committee, at all meetings of the Society, of the Board and of the Standing Committees. He shall keep a careful record of all proceedings, shall have the custody of the seal, archives and books, other than books of account, and shall conduct the correspondence of the Society. He shall issue all notices and tickets, and shall perform such other duties as the Board may direct. He shall be a member *ex-officio* of the Executive, Aquarium, and Auditing Committees, and of the Scientific Council.

SEC. 6. The Director of the Zoological Park shall be elected annually by the Executive Committee at a salary to be determined by said Committee, and shall hold office until removed or his successor chosen by said Committee. He shall be the responsible administrative officer of the Park, and shall recommend to the Executive Committee candidates for the various positions in the Park. He shall also perform all such other duties in connection with the business, scientific, and literary administration of the Society as may be assigned to him by the Executive Committee.

SEC. 7. The Director of the Aquarium shall be elected annually by the Executive Committee and shall hold office until removed or his successor is chosen by said Committee. He shall be the responsible administrative officer of the Aquarium, and shall recommend to the Executive Committee all candidates for positions in the Aquarium. The director of the Aquarium shall be *ex-officio* a member and Chairman of the Aquarium Committee. He shall perform such other duties in connection with the Aquarium as may be assigned to him by the Executive Committee.

ARTICLE IV.

COMMITTEES.

SEC. 1. There shall be two standing committees, the Executive Committee and the Auditing Committee, which shall hold office for one year or until their successors are elected.

SEC. 2. The Executive Committee shall consist of seven Managers, together with the President and Secretary of the Society *ex-officio*. Four members shall constitute a quorum, and all meetings shall be called by the Chairman. The Executive Committee shall fill all vacancies in its own number and shall have the full powers of the Board of Managers, except so far as such delegation of power may be contrary to law.

SEC. 3. The Executive Committee shall have the control and regulation of the collections, library, and all other property of the Society, and shall have power to purchase, sell, and exchange specimens and books, to employ and control all officials and employees of the Society, Park, and Aquarium, and generally to carry out in detail the directions of the Board of Managers and the terms of any contract between the City, or Park Board, and the Society.

SEC. 4. All the rules and regulations for the examination of applicants for the various positions in the Park and Aquarium shall be made or approved by the Executive Committee.

SEC. 5. The Executive Committee may regulate the auditing and payment for all current accounts.

SEC. 6. The Executive Committee shall annually appoint an Aquarium Committee, whose duties and powers are set forth in Section II of Article IV of these By-Laws.

SEC. 7. The Executive Committee shall annually appoint a Nominating Committee, whose duties and powers are set forth in Sections 6 and 7, Article II, of these By-Laws.

SEC. 8. It shall also appoint a Scientific Council, whose powers and duties are set forth in Section 2 of Article V of these By-Laws.

SEC. 9. The Committee shall make a written report at each regular meeting of the Board of Managers.

SEC. 10. The Auditing Committee shall consist of three regular members of the Society, in addition to the President and Secretary, members *ex-officio*, and vacancies shall be filled by the Executive Committee. It shall be the duty of the Auditing Committee to audit, annually, the accounts of the Treasurer, of the Director of the Zoological Park, and of the Director of the Aquarium, and any other accounts of the Society, and shall report to the Board of Managers at its annual meeting.

SEC. 11. The Executive Committee shall annually appoint an Aquarium Committee, not to exceed eight members of this Society, who shall hold office until their successors are chosen. All vacancies shall be filled by the Executive Committee. The Director of the Aquarium shall be *ex-officio* a member and the Chairman of the Aquarium Committee, and such Committee may vest in him any or all of its powers. The Chairman of the Executive Committee and the Secretary of the Society shall also be *ex-officio* members of the Aquarium Committee. Three members shall constitute a quorum. The Executive Committee may delegate to the Aquarium Committee such powers as it may deem proper.

ARTICLE V.

SCIENTIFIC COUNCIL.

SEC. 1. The Executive Committee shall annually appoint a Scientific Council of not more than ten members, and shall fill all vacancies. Members of the Council shall hold office until their successors are appointed.

SEC. 2. The duties of the Council shall be to act as an advisory board in all matters pertaining to the scientific administration of the Society, and especially as to the scientific features of the Park, the promotion of zoology by publications and otherwise, and the preservation of the native fauna of America.

SEC. 3. Four members, including the Chairman, shall constitute a quorum. The Chairman shall be elected annually by the Council. The Chairman of the Executive Committee and the Secretary of the Society shall be members *ex-officio* of the Council.

ARTICLE VI.

MEMBERS.

SEC. 1. The present members and such others as shall become associated with them, under the conditions prescribed by the By-Laws, shall be members of this Society as long as they shall comply with the By-Laws.

SEC. 2. Members failing to comply with these By-Laws, or for other good and sufficient cause, may be expelled from the Society by the Executive Committee.

SEC. 3. Candidates for membership shall be proposed and seconded by members of the Society. The name, occupation, and place of residence of every member as proposed shall be submitted for election to the Board of Managers or the Executive Committee, and such person, when elected, shall become a member upon payment of the annual dues, or of the fees as prescribed below.

SEC. 4. There shall be a class known as Fellows, which shall consist of members of the Society who have rendered marked services to science, and shall be chosen by the Executive Committee. The privileges of Fellows shall be in all respects the same as those of regular members of the Society, but they shall be exempt from the payment of annual dues.

SEC. 5. The annual dues shall be ten dollars, payable in advance, on the first day of May of each year, but the Executive Committee may remit the dues for the current year in the case of members elected between January 1st and May 1st of each year. The classes of membership shall be as follows:

SEC. 6. The payment of \$200 at one time shall constitute any member a Life Member.

A member who has paid annual dues for a period of five years may thereafter, at any time, upon the payment of the difference between the amount of dues already paid and \$200, become a Life Member, but such payment shall be not less than \$100.

SEC. 7. The payment of \$1,000 at one time, or in the case of a Life Member, of \$800, shall constitute any member a Patron.

SEC. 8. The payment of \$2,500 at one time, or in the case of a Patron of \$1,500, or of a Life Member of \$2,300, shall constitute any member an Associate Founder.

SEC. 9. Any member who shall donate to the Society \$5,000, or property of equal value, or any Associate Founder who shall donate \$2,500, or any Patron who shall donate \$4,000, may be elected by the Board of Managers or Executive Committee a Founder.

SEC. 10. Any member who shall have donated to the Society ten thousand dollars (\$10,000), or its equivalent, may be elected by the Board of Managers or the Executive Committee a Founder in Perpetuity. Such Founder in Perpetuity shall have the power to designate by a last will and testament his successor, who shall thereupon be entitled to all the rights and privileges of the original Founder in Perpetuity, including the right of designating in turn his successor.

SEC. 11. Any member who shall have donated to the Society \$25,000, or its equivalent, may be elected by the Board of Managers, or the Executive Committee, a Benefactor. Benefactors shall have the rights and privileges of a Founder in Perpetuity.

SEC. 12. Persons who have rendered marked service in the science of zoology or natural history may be elected Honorary Members, but not more than three such Honorary Members shall be elected in any one calendar year.

SEC. 13. A resident member who shall have rendered marked scientific or professional services to the Society in any branch of its work may be elected by the Executive Committee a Life Member, Patron, Associate Founder, or Founder. A resident of New York who shall have rendered marked service in zoology or natural history may be elected by the Executive Committee a Permanent Fellow.

SEC. 14. Non-residents who communicate valuable information to the Society, or who have rendered marked service in the science of zoology or natural history, may be elected Corresponding Members.

SEC. 15. Benefactors, Founders in Perpetuity, Founders, Associate Founders, Patrons, Life Members, Honorary Members, Permanent Fellows, Fellows, and Corresponding Members shall be exempt from annual dues.

ARTICLE VII.

PRIVILEGES OF MEMBERS.

SEC. 1. A member's ticket admits the member and his immediate family to the Park on reserve days, and to all lectures and special exhibitions, and may be used by the member's immediate family, and shall be good for the current year.

SEC. 2. Admission tickets to the Park and Aquarium on reserve days are issued to members for distribution, and are good for the current year.

SEC. 3. Each member of the Society is entitled annually to a member's ticket and to ten admission tickets.

SEC. 4. Each member shall also receive one copy of the catalogue or handbook, the report and official publication of the Society, and shall have all the privileges of the Library and Member's Building.

SEC. 5. No member shall be entitled to the privileges enumerated in this Article unless his annual dues shall have been paid.

SEC. 6. The Life Members shall have all the privileges of members and ten additional admission tickets.

SEC. 7. Benefactors, Founders in Perpetuity, Founders, Associate Founders and Patrons shall have all the privileges of Life Members, and shall in addition receive copies of all scientific works published by the Society.

SEC. 8. Any member who shall fail to pay his annual dues within three months after the same shall have become due, and after notice of thirty days, by mail, shall cease to be a member of the Society; subject, however, to reinstatement by the Board of Managers or Executive Committee for good cause shown.

SEC. 9. Any person elected to membership who shall fail to qualify within three months after notice of his election shall be considered to have declined his election; but such term may be extended by the Board of Managers, or Executive Committee.

ARTICLE VIII.

FINANCES.

SEC. 1. The fiscal year of the corporation shall be the calendar year commencing January 1st and ending December 31st.

SEC. 2. Neither the Society nor any of its Managers or Officers shall contract any debt which, with existing debts, shall exceed in amount the funds then in the Treasury, except to meet expenditures for which the City is liable, and for which the Society will be reimbursed by warrants from the Comptroller's office.

ARTICLE IX.

AMENDMENTS.

SEC. 1. Amendments to these By-Laws may be proposed, in writing, at any meeting of the Board of Managers, and adopted by unanimous consent of the Managers present, or if such proposed amendment shall fail to receive unanimous consent, the Secretary shall, with the notices of the next meeting, send a copy of it to each Manager and state that it will be brought up for action at such meeting, when it may be passed by a majority vote.

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